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M E E T

The Maintenance Gang

Maintenance Foreman DELBERT J. MARTIN was born in Minnesota, came to Montana in 1911, tried ranching for the next few years (with a brief interlude in paper business on the coast) and finally joined the Highway in 1929. Del worked up to his present position through the various classifications of laborer, truck driver, gravel checker, oil inspector and gang foreman. He knows Division Nine better than most of us know our wives, has two mighty pretty daughters -- and you should taste Mrs. Martin's baked beans! Del's Lewistown crew includes BOB BROWN, BILL CAMERON, PETE WILTGEN, ANDY HAY, BOB MURRAY, EVERETT TAGUE, GEORGE JENKINS, JOHN MURRAY, DAD TILLER, CLAUDE COOK and EARL VON LINDERN.

DON J. DYER, Gang Foreman, migrated from Nebraska about 1920, spent a few years on road and mechanical work in Meagher County before starting with this department in 1930 behind a two-up team, and now wet-nurses some 112 miles of highway around White Sulphur Springs. Ten years of maintenance have gained Don plenty of experience in the racket, but have cost him lots of sleep -- and a toe or two which were no longer of much use after T-149 collapsed in -50° weather one night during one of our 1936 blizzards. Among Don's crew are TED HUFFMAN, JIM CRUICKSHANK, RED BIANCHI, HARRY TUCKER, HARRY EAST and EARL BEST.

Senior Sectionman, considering his eleven years of MHD service, LESLIE A. FINKBEINER, was born in Grass Range in 1903, is still doing business at the same old stand and, since he has acquired his own home, one wife and two daughters, can probably be reached at that address for some time to come. Les and JERRY JOHNSON, after years of blading, finally managed to wear out FAP 229-C so that it had to be reconstructed last summer, much to the delight of the well known motoring public.

Sectionman MATHIAS FOCHS was born in Wisconsin but hit Montana in 1909, and since ten years ago come spring has worked on Montana No. 6 east and west of Shawmut, taking the ups and downs of highway work stoically. Math invariably bags his buck each fall but spends most of his spare time rustling grub for the increase in population of his home town, which he has sponsored to the tune of five sons and four daughters!

ALBERT P. SPADY, White Sulphur Springs sectionman, came from Nebraska twenty-seven years ago and first worked with us in 1930. Al is one of Ike Walton's most enthusiastic disciples and also totes a wicked .300, but is not averse, on occasions (so we've heard) to accepting a pronged critter to wear his game tag. Al recently made the mistake of promising his eldest boy a bike if he passed, after a tough year, and the boy made school work look mighty easy after taking the old man.

Also a Nebraskan, STANLEY J. FOLTA has lived in Montana since he was four years old and has spent the last ten years trying to do something about the niggerheads on 14 MK from Hilger to Roy. Stan has a lot of fun trying to keep folks moving "to and fro" during the snow storms which strike his grass-root bailiwick, but finds time each fall to decrease the deer population of the Missouri breaks by one five or six-pointer.

Back in the days when Montana U's famed Blitzen Benz was bolwing them over on the gridiron, one of his favorite targest was NORMAN H. GILLETE, so, looking for "a better 'ole," Norm joined the A.E.F. and soon had the Hohenzollern affair well in hand. Now, stationed at Winnett, he spends his time throwing flying tackles into the 35 M_a drifts and washouts, which are gradually becoming docile after nine years of such punishment. Gillette is another native Montanan.

Also an ex-service man, C. VERNE JOHNSON patrols Montana No. 6 out of Ryegate. He was born in Illinois, but moved west in 1912 and has been taking care of MHD affairs in Golden Valley County for seven years. Verne and BILL McKEEN are some "skeered" of the old Musselshell since she rampaged away several hundred feet of their grade in '38, and get plumb jittery even now whenever a few raindrops land in their neck of the woods. Verne gave up trying for a "sheepherder" after being blessed with four fine daughters.

DWIGHT CRAWFORD, Harlowton sectionman, was also born in Illinois, but, being a very discriminating child, packed his trunk and moved to a good state when he was only a yearling. He has worked for the Highway since 4-17-33 and if the entire 54 MA grade should wash out tomorrow, Dwight would just shake his head, call STEVE KOTAN, tighten his belt and start rebuilding as calmly as if he were merely cleaning culverts. Dwight and Steve, incidentally, are also among those who eat venison each fall.

Out among the sage, rattlers and jackass rabbits 235-pound HAROLD L. NEITER manages 177 MA in Garfield County. Harold came here from Nebraska sixteen years ago, became a sectionman in 1933 and lives at Sand Springs, which village is chiefly noted for its -60° weather and Mary Neiter's cooking -- ask any of the crew who were snowed in there in February, 1936. Harold might be termed the division's outstanding host, and any of you lads wandering near his domicile could well spend a few happy hours making a call, although he'll probably meet you at the door with, "Have you heard the one about -----." SAM HEINTON is the truck driver.

From Utah came JOHN F. HARRIS, who has grown to weigh 225 pounds after 27 years in this climate. John rides herd on 23 MA out of Stanford, where he started blading with a team patrol in 1933. Like most fellows carrying a little extra poundage, he ta es things pretty calmly, even in a heated argument, and you can push him quite a ways -- but don't start shovin' !

And from Sweden we have ENOCH CARLSON, naturalized American, Montana resident for thirty years and highwayman since 1933. Enoch lives between Roundup and Devil's Basin and, in case you pass by, Mrs. Enoch always keeps the coffee hot. Enoch recently had the unluckiest month of his life; he broke a mirror, got bumped into twice, crippled his best cow, failed to bag his usual yearly venison, and while innocently sitting with a neighbor and a shotgun, was charged with shooting ducks after 4 P.M. Truck driver here is ADOLF BARGHOLT from Germany, naturalized and 29 years in Montana -- the melting pot.

OSCAR HUBENTHAL, our youngest sectionman, has been with the department since 1935 and now headquarters in the Deep Creek section house, ready to rush through the canyon drifts on 4 MC and 30 MC. Oscar's chief trouble consists of trying to push a couple of feet of snow up a five or six per cent grade with a four-cylinder Ford and an inch or so of ice underfoot--and he does "right smart" at it, too!

The Shop Crew

CHARLES W. MARVIN, Division Mechanic, was introduced to Center Line readers in an earlier issue so we'll just add that, as chief surgeon of some one hundred MHD units, Charlie is always ready to operate for any ailment from a broken axle to electrical thrombosis of the generator and keeps each truck and patrol fairly oozing mechanical "umph". He has just one wife (meet Mabel), one son, two daughers, and is an expert candy cook -- after so many years in the grease that's the only way he can get his hands clean.

Weighing 195 and 230 pounds, respectively, mechanics J. A. (ARCHIE) DESY and CHARLES O. BENJAMIN have been with the department since '28 and '29, also respectively. Both were born in Lewistown, both are married and each has two daughters and fewer sons than Eddie Cantor. These boys grew up with the Highway and plowed snow in the days when an eight-hour shift was sissy stuff and a driver strapped twenty miles from town in a blizzard could make his own repairs, walk home or just stay there and congeal; there was no one to come after him.

LEONARD LARSON, mechanic since 1936, is also a local product. He spends most of his time lying face up on the floor swearing at the bellies of our light equipment. "Olie" skates, skiis, bowls, plays softball, has two sons and a cute wife -- perhaps we'd better add that he's also one of the state's crack rifle shots.

JAMES S. KEENEY, mechanic's helper, has been getting to work with just three seconds to spare each morning since he started with us four years ago. Jim, with his spray gun and striping brushes, is responsible for those factory-like paint jobs by which Division Nine equipment can be recognized anywhere in the state. He is married, has two kids, and was born in Butte.

Gas Distributor THOMAS F. TOOMEY originally hailed from Nebraska, came to Montana years and years ago and has been with the Highway Department since 1930. After experience in almost every other job in the MHD curriculum Tom has just started hauling gas and is hoping to coax old T-539 along for a few more weeks after it has already groaned over some 120,000 miles (Helena please note). Tom also renovates our old signs, builds new ones and pinch-hits as a heavy truck driver or snow plow operator when required.

Division Nine wishes to say goodbye and good luck to LEONARD A. ELIJAH, former gas distributor, who is now selling gas for Standard Oil after having hauled 400,000 gallons of it for MHD.

Engineers

GEORGE A. NUGENT was born in Basin, Montana, in 1909. Eventually grew up; sailed on his Highway career in 1930. After several years in Division Ten, George moved here late in 1938, moved into a trailer house a year later and has now moved to the sticks -- where he spends his days supervising FAP 333-B and his nights wondering why the town of Roy stages its nightly blackout at the saintly hour of 8:00 P.M. Wife Vera manages to keep fairly busy supervising one Project Engineer, one daughter, one recalcitrant gas heater and one large Laborador canine.

From Kalispell, BRUCE ISEMINGER started with the Department in 1933, came here from Division Six early in 1939 and is now wintering at Roy, where he finds they have very attractive schools, to say nothing of the teachers. Bruce's terpsichorean ability leads one to suspect a dancing teacher somewhere in his lurid past, but he's still a lone wolf with only one serious vice -- those god-awful-Joe Palooka shirts.

WILLIAM A. BLAKE was born and raised in Central Montana, began Highway work as a Maintenance man four years ago and graduated to engineering in 1938. A little blond hog-tied this six-foot prospect some time ago, but they still have no high chairs in their trailer house. Bill and the Mrs. are also wintering in Roy.

CHARLES C. (Hold-the-Phone) CHENEY was born in Stanford, Montana, in 1907, is married and has added three more members to the Cheney clan. Joined the Highway 'way back in 1928 and, after considerable experience on FAP's, NRH's, FAGH's, etc., all over this here now state, is at present Acting Project Engineer on FAS 356-C, with headquarters at Grass Range. Charlie is another one of those fellows who thinks it's fun to plod over the hills all day with a gun on one shoulder. He is also a "pan" player, and must be doing OK judging from the new car he's driving.

Born at Hinsdale, Montana, in 1906, TOM RATCHFORD moved to Kalispell when he was fifteen years old, started to work for the Highway Department as Chainman some thirteen years ago, and has been in the engineering game ever since. At present Tom is Instrumentman on FAS 356-C, lives in Grass Range with the Mrs. He acquired in 1936, and has only a trailer house to show for the years since that date.

And in this corner, weighing 135 pounds, from Helena and still single after four years with MHD, CLARENCE JOSEPH FARRY, whom we hereby nominate as Montana's No. 1 sports enthusiast. Small but supercharged, "Sonny" has tackled bowling, football, etc., and is now basketballing on a Grass Range team. Last summer, playing centerfield as a change from his regular pitching position on Division Nine's softball team, he was suddenly found backing up the catcher during an attempted home-plate steal. You tell us how he got there!

Office Force

In the Lewistown office, and introduced to Center Line readers in former issues, are Ray Percy, Division Engineer, John McGhee, Resident Engineer, and Dick Stoddard, Division Clerk.

(Continued)

Also JEANE M. ROGERS, native of Lewistown, who, as Sr.Stenographer has been pounding our typewriters since December of 1936. "Daisy Mae" rides herd on all our young engineers, does her damndest to keep us all in good humor and has just achieved the unique distinction of being the only Highway girl to send in Industrial Accident Board Forms 37 and 37A to cover an injury received as a result of having fallen into her own desk drawer.

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AFTER THE DIVISION TEN NUMBER, WHAT?

The Center Line putter-togetherers are not only open to suggestion but asking for it. Obviously to anyone with enough fingers to count that far, the Division Ten number follows this, and that will end the series. Again obviously, some of our features will be pretty well depleted, such as Meet, especially from the field. Pessimistically perhaps, we fear that those who have contributed during the past issues will feel they have done their bit.

There's been some mighty good stuff turned in during the last year, and this is just a plea for you to keep it coming.

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Stepping mighty gingerly over the icy spots these days is Benny Ornburn, but recently back at work since his apendectomy. B.J.'s chief worry at present is that the operation will retard his golfing activities somewhat this summer.

Benny's vacant hospital cot was immediately filled by Chalmers Wise of the Plans Division, who submitted to a similar operation the 26thof this month. If it's good enough for Benny, says Chalmers, it's good enough for me. Chalmers is reported as getting along satisfactorily.

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Mr. and Mrs. Sam Thompson of the Missoula Division are the parents of a daughter born February 19th.

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DIVISION NINE
By
John McGhee

Division Nine nestles confortably around the center of this big state of ours, the exact core being in the southeast corner of the kitchen sink in the big red brick house atop the Lewistown Main Street hill. Mr. Hart glories in our freedom from problems of a maintenance nature on our 10 per cent of the state's mileage, but a few of those miles, built when Coolidge was sitting tight, and not on WPA outside plumbing either, cause Mr. Percy and some of the rest of us a spoiled evening now and then.

With all the good scenery in the state taken up by 1, 2, 3, 5 and 6, and the plains usurped by 4, 7 and 8, all we got left here is a little "in between stuff" from 10,000 feet (Big Belts) down to half a mile (Mosby), with a few spots above a mile to keep the public moving on and damned little timber that far down to give a man a wind-break for his "morning's mornin'."

Charley Russell liked our scenery pretty good though, and really spread the word of our fine climate by stepping from his door at Utica one balmy morning with the violets and daffodils all in bloom and painting his "Last of the Five Thousand" just as the antithesis to the actual conditions here in our Judith Basin! Charley did most of his early roamin' and sowin' in these parts (which speaks for itself in this matter of esthetics) and even though he went broke enough to be inveigled into residing in Great Falls in later life, his best paintings depict his beloved Judith country. There's waving wheat and a checker-board of barbed wire now where Charley used to ride and bands of sheep wander where the plow refuses to go, like for instance the old mining camps--Copperopolis, Yogo, Maiden, Castle--ah, there's a spot for you! Try driving through this long abandoned mining town at dusk some evening, with its buildings still erect and intact, aloof and abandoned these forty years nestling on top of the Castle Mountains along a boulder strewn street--you'll experience quite a chill as you pass the old saloon and dance hall and almost hear the clink of glasses, the laughter and music of the Hell Roarin' Nineties. I'll wager that you'll "ride a wee" before you leave the scene behind you.

This Division of ours is really quite a country. We'll take you around a bit and show you some of our roads and maybe some of the scenery, and glean a little of the history that endears a land to its natives. There's the rattlers (hundred and nineteen of them in one knoll near Sand Springs), sage brush, scrub cedars, sheep and antelope along Montana 19 east of the Musselshell at Mosby, where the thermometer hits 60 below and 120 above with equal ease and where the boys got marooned in February of '36 during that tough blizzard and darned near stayed the rest of the year the grub was so good. Cattle rustlers and horse-thieves found plenty of coulees and other hideout space in the early eighties and did right well by themselves until cattlemen in that area took matters into their own hands and staged a few gun battles and necktie parties in '84 and pretty well cleared the atmosphere, the biggest battle being a gun-fight at the mouth of the Musselshell where ten horsethieves were buried with their boots on and the five that escaped were later caught and exposed to the elements.

In early '20, a wildcatter was punching a few holes in the ground just west of the Musselshell and happened to smack into a gusher about 1000 feet down near Cat Creek, which helped to grubstake quite a few homesteaders in that neck of the woods. The country is pretty well vacated now, but we try to keep the road open anyway, since the end of the "rails" is at Winnett and quite a little grasshopper poison has to be hauled to the inland towns along 19. In this area originated the expression "It never rains but it pours," since a few years ago the road location was changed following a gentle sprinkle that deposited several panels of timber bridges occupying space in two or three acre coulees, many miles downstream. We may live to see a change even in the present site, after a few more such sprinkles, since we still have occasion to do patch work every couple of years.

The dangdest sight I can remember was during the heat of July '38 after a bad washout, driving down to inspect the improvements and finding most of the horses belonging to the Fresno crew suspended in hammocks in mid-air with rude pine bough lean-to's thrown over them, right in the middle of the sagebrush, and all sound asleep and the men having a helluva time abusing the language and trying to break in some green broncoes on a Russell plow in rubbery gumbo.

Cutting west and south from here, through Grass Range and Roundup, you cross the terrain covered by the old trail herds from Texas, herds that required six full months to make their long and dangerous journey, usually running about 2500 head to the caravan of wild eyed Longhorns. Roundup got its name from the fact the big outfits did a lot of their branding there. They found the spot quite free from strong winds and some warmer than the surrounding country, with grassy coulees ideal for winter feed and shelter scattered among the locales hundreds of square miles of jackpine ridges. A pair of well preserved longhorns mounted over barn and garage doors is still a common sight through here. The discovery of "black gold" terminated the use of this spot as a winter playground for cowhands and brought an influx of lads to work the mines at somewhat better wages than had been common thereabouts. Roundup now supplies soft coal from Seattle to the Twin Cities in a dozen assorted sizes and grades. The largest mine, Bucking Bronco No. 3, has a daily capacity of 2000 tons, and the total daily capacity of all Roundup mines is estimated roughly at 5000 tons. Our snow and flood problems aren't too tough right through here (they usually aren't where roads approximate the old cattle trails), but we have a standing prize up for anyone finding any of the original oil mats through the patches!

Swinging west up the Musselshell valley from here you will pass the scene of our bad 1938 washout at Burgoyne, where three times during a week in June of that year the crest of the Musselshell flood exceeded the forty year high water mark. Cloudbursts up the smaller creeks on successive nights caused the trouble, with quite a loss to sheep. Anyway, we've placed a rock fill for several hundred feet where the river disliked our channel change, and believe we can rest a mite easier henceforth. This is also the point where Chief Joseph and his Nez Perces crossed the Musselshell after the battle of the Big Hole in 1877, enroute through Half Moon Pass and Lewistown to try for the border.

Moving on west you'll come into contact with the valleys fertile hay lands from Shawmut west, and are apt to encounter tremendous bands

of sheep and herds of cattle. Antelope graze within a few hundred feet of the highway in bands ranging up to 65 head. The town of Twodot is named after one of the famous early day cattle brands. Harlowton, the Milwaukee division point, is the western terminal for steam driven locomotives, the route being electrified from this point on west. The Montana Power line crosses the Belts near Neihart and King's Hill. Quite rugged mountains, the "Crazies," are a few miles away to the south through this section of the Division, receiving their name from an abbreviation of the Crazy Woman Mountains, so named after a woman from an immigrant train went screwy and wandered into them. Icy blasts crossing these snow covered peaks give us plenty of winter trouble, but good high grade lines bring miles of smiles during runoff periods.

Again westward ho from here and you reach the home of the Native Montana Cutthroat trout in the headwaters of the Musselshell, probably as fine and game a fish as you'll ever encounter, much tastier than even our esteemed rainbows. You'll find a couple of new dams spanning both forks of this river to hold back runoffs for use in irrigation, and pretty sizable fish above them that will probably get more sizable before we can catch them now that "cowbells" are deceased. You'll also pass a boundary fence made of rock that runs diagonally across the valley, made by Indians many moons ago to mark the hunting boundary between the Blackfeet and the Crows. We'd hazard a guess that the Blackfeet did a little better in the swap, probably how come the Crows were so warlike and mad all the time.

After passing through the North Fork Canyon separating the Little Belts on the north from the Castles on the south, a right pretty little canyon too, by the way--you emerge upon a terrain that looks entirely innocent of any evil doing but goes plumb crazy during every winter. The elevation remains above a mile high for over 20 miles, and acts accordingly. This mileage has been ditchless county road, state maintained gratis, until this year and we are breathing a bit easier now that we've finally got a budget to cover our plowing. You'll discover quite a bit of double-decked snow fence staggering around helter skelter, but in the spring she's real pretty with thousands of cute little lambing tents scattered over the fresh green of new grass. Deer or elk might slow you down; in case you're through here around Labor Day stop and see the only trained diving buffalo in the world or the hunting elk that Durand rides deer hunting. His dude ranch has the only registered elk brand in America and this boy Durand isn't so dumb, seein' as how he gets his chuck during the winters lecturing and showing his movies of game animals at Yale, Harvard, Princeton and Columbia while wranglin' dude ranch business for the next summer.

This stretch of road is still mostly unsurfaced, but if it isn't too wet and slippery you'll finally arrive in White Sulphur Springs in time for lunch, and discover that the hot springs here are the nearest in chemical analysis to the Spas at Baden Baden, of any in the world and that the Indians of many tribes used to bring their aged and their sick to this spring unmolested by warring bucks, a truly neutral ground. Were it not for legal involvement this spot could readily become a world renowned mecca for the infirm. The water itself tastes like the dickens to me, but then all I've got is a little arthritis--some of you folks with acute alcoholism or this new jitterbug might find it tastier! A branch of the Smith River meanders through this frontier county seat, whose finny inhabitants afford a few of us egress from our vicissitudes

on warm summer evenings after the days work is done. The widow of one of the Ringlings (circus fame) lives here in a little shack of 25 rooms (at one time they had three grand pianos in the basement together with the bar). The barn burned a number of years ago, a trifle housing 200 head of cattle at stanchion with 400 ton hay loft capacity and inlaid cork floors, to say nothing of running water for the individual drinking booths for the female cows. Paul Bunyan couldn't keep up with the milking machines.

In this Meagher (pronounced Mar) County country you'll find huge bands of sheep and cattle, some fifty carloads of wool alone being shipped each year, to say nothing of the ten million odd pounds of beef annually escorted to the stockyards. You'll find old Fort Logan some 17 miles west of the Springs in the heart of the cattle country, but originally established as Camp Baker in 1869 to protect miners of the Diamond City and Confederate Gulch country from Indian raids. One log stockade still stands. To get out there, drive over old FAP 49A, almost as ancient as the Fort itself with a boulder here and there to take the place of the gravel never placed, but hell, I'm the only Highway or Bureau guy that ever casts an optic at it anyway. They're still placer mining out that way and a rig up Thomas Creek is worth your time to look at for ingenuity. They make expenses too, I betcha. A more elaborate outfit might be seen across the ridge in Confederate Gulch.

Sixteen Mile Creek, running through Ringling and about 20 miles south of the Springs, is the historic spot where Bob Burns Uncle Izaak used to do his trout fishing. He made some wonderful catches there, the best being the two 12 pounders he got the time he forgot his bait. While pondering what to do about it he noticed a rattler with a half swallowed frog in his mouth and upon proffering the reptile a drink of his corn liquor, secured the frog for use as bait. Just after landing the first of his twelve pounders and while sitting down to rest, he felt a light touch on his thigh and upon looking down discovered the same rattler with another frog in his mouth and a pleading look in his eye, whereupon Izaak proffered the second drink, took the frog and proceeded to make his record catch. Sixteen is like that, but I can't vouch for the fishing. We got a new overpass at Ringling this past year covering both the Creek and the Milwaukee main line.

Halfway between Ringling and the Springs, a junction takes place between Montana 6 and U. S. 89, Six then wandering off to the west through Deep Creek towards civilization and the Capitol, but quite a struggle sometimes takes place between the elements and the unsuspecting traveler along the head of the Canyon. A maize of double decked snow fence helps this stretch through some of the tough ones and a good old Sno-go unit confortably housed in our section house also contributes plenty to our peace of mind--probably getting a damsight warmer reception on its arrival than even Wallis handed her Duke, since after all, this was our units maiden voyage!

Immediately north of the section house is the Big Belts "Old Baldy," home of Crater Lake with its blind trout (all trout are more or less blind insofar as my bait is concerned), and to the south can be seen the ridge where a party of Indian bucks enroute home after a horse stealing raid ambushed a party of soldiers sent after them, and likely would have improved the toupee business had not one soldier been able to break away

under cover of darkness and secure aid. The horses were recovered too, as the story goes! Just in case you are still reading this yarn and might be an Indian lore enthusiast, immediately below the beer parlow near the mouth of the canyon that marks our boundary with Division One can be seen a well defined trail winding up the mountain to the south, which old timers claim was the route taken by the Blackfeet Tribe in the fall and spring to and from winter camp grounds in Yellowstone. They went after certain rare paint pigments and medicinal herbs, so the yarn goes. This Deep Creek road requires quite a heap of plowing and sanding each winter, 12 to 18 inches of snowfall in a twenty-four hour period being quite comman, but being built out of solid rock I have a hunch she will take it for a few hundred years.

Looks like we'd better light out for home or else this yarn will have to take the installment route or be relegated to the waste basket, so to avoid backtracking, we'll cut to the top of King's Hill, which by the way is the highest pass in the state kept open the year around. The elevation is 7400 feet. Division Two does the honors at the top of the hill with a swell section house anchored among the tall firs, so we'll throw the Chev. in the bull gear and try the trail across the top of the world which heads the three forks of the Judith River, that will land us some 70 miles west of Lewistown near the vicinity of our west boundary at Geyser. This trail has been improved considerably by the CCC boys in line with the Forest Service fire prevention program, but even so, you do the looking and we'll confine our efforts to dodging down the hairpins as we drop into Dry Wolf or Yogo. The vast area you see isn't second to any in this country when it comes to deer hunting, some 800 bucks annually being taken out. Some elk and bear are also bagged, not to mention the critters left behind for fertilizer, such as mules, cows and dogs. Most ranchers have long since found Jerseys impractical to raise due to their being unhealthily allergic to some of the would be hunters. We spend a happy week of our vacation each fall in a cabin on the Middle Fork about a mile above the ranger station, and gentlemen, buck or no buck, that trip is worth all the silver in China!

In dropping down from the mile and half elevation at the top of the divide you can take your choice of a trip down Yogo, through Utica and Charley Russell's old stompin' grounds or down Dry Wolf Canyon towards Stanford or Geyser. Should you take the former route you'll pass the Sapphire Mine where you'll discover the finest deepest colored sapphires in the world. These stones are imbedded in rock which first must be cracked and then allowed to weather for many years before the stones can be removed. From a big business in the early days she's dwindled to a one-man job now, an elderly Englishman who may or may not show you a few valuable gems or stones of a carat each, built for exhibition at the worlds fairs of a third century ago. The manufacture of synthetic sapphires has taken the watch business away from this rustic environment and with it, 99.44% of the profit. Let's take the Dry Wolf route however, in order to get home a little faster since it's only a few miles away from 87 at Stanford. There's an anomaly for you--Dry Wolf has running water most of its course, while over the first ridge to the east Running Wolf is bone dry. The old timers had a strange sense of humor.

Emerging from the canyon a short distance west of Stanford, a mountain range to the northwest will take your eye, chiefly for its lack

of scenic attractiveness. These are the Highwoods, noted principally as the home of cattle killing wolves well up into the '20s. One big grey fellow is still mounted in a show case in the court house at Stanford, about a hand taller than the highest hound and some foot longer, from his looks we'd scarcely judge him to be a member of the tail wagging breed of wolves, if there are such. 87 into Lewistown is of fairly recent vintage with a good surface and we'll likely step too fast for you to envisage the huge wheat acreage lying to the right and left, or the spot a few miles west of town from which seven distinct mountain ranges can be seen surrounding you on a clear day, evidently placed there to buffet any stray clouds around until every drop of rain or snow was squeezed out to boost our Judith Basin wheat crops, or benefit the boys with a little extra snow plowing. We average around 72 inches of snow here each winter.

Lewistown occupies the site of old Fort Reed, well sheltered from wintry blasts but certainly no lookout post, since you're in town from east or west without seeing any of our embellishments beforehand. Not so Fort Maginnis, which occupied a vantage point some 20 odd miles northeast at the eastern end of the Judith Mountains, from which site the gently sloping terrain could be scrutinized for many many miles in every direction. Fort Reed was mostly a trading post but Maginnis was established in '79 to keep the Injuns from mistaking cattle for buffalo, since the trail herds were arriving in large numbers and interfered some with the tribesmens vittles. It seems fitting with such a military background that the worlds champion pistol expert, Ed McGivern, should make this his home. Ed is a small reticent Scotch-Irishman, who can make a six-shooter speak 49 languages. Every day stunts for him are to park 5 shots in a playing card at 25 feet in 2/5's of a second, not with an automatic but a straight 38 caliber hammer gun! Or, outdo Wild Bill Hickok's old stunt of keeping a can in the air for six shots by breaking 5 small 2½" inch balls, thrown in the air simultaneously, before they can reach the ground. Ed's fast draw, (not his medium or slow one) is to relinquish one shot in around a quarter of a second from the time he moves his hand, electric timing. That, by the way, includes cocking the weapon. It also seems fitting that Lewistown is the home bailiwick for our Governor. He was a child in arms but nonetheless an eye witness to the shooting up of the town by Rattlesnake Jake and his friend Owens in '83, which riled the citizens here plenty, the upshot being Jake has served as fertilizer these many years. For further history of these parts we respectfully refer you to Teddy Blue Abbott's book, "We Headed Them North." Good night, gentlemen.

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From Division Five: We have noted at different times in the Center Line references to some of the Helena boys who make long drives just to spend a few hours with the Girl Friend. Division 5 has a variation of this situation. The Girl Friend is the one who drives from Billings to Missoula for a few of those hours. For information and details as to how to train 'em this way we refer you to a former distributor driver for one of the State Oiling Crews. Unquote.

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From a child's examination paper: "Christians are only allowed one wife. This is called monotony."

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THE HIGHWAYMAN

Division Nine presents, for the first time in this, or any other publication, an intimate statistical analysis of the Montana Highway Department employee.

At the risk of life, limb and sanity we have stalked the male of this peculiar species in his native haunts; peered into truck cabs, Winchelled around section houses and spent lonely hours crouched by countless keyholes in order to give you the lowdown on the typical road ape's age, physical characteristics, appetities and love life.

Our census covers 48 regular employees who were in Division Nine early in December: Five mechanics, eight engineers and thirty-five maintenance men. In the matter of age we find that the average employee will be 42 years old midway in 1940, giving a total of 2016 man-years in all. Engineers have the youngest average of 31.25 years, with mechanics coming next at 33.8 years.

The 48 men have been with MHD a total of 364 years, or an average of 7.58 each. Youngest man considering years of service started with us four years ago; oldest was first employed in 1919. Maintenance men rank lowest in seniority at an average of 6.77 years, engineers at 9.75 years and mechanics at 9.80.

All on one bathroom scale the gang would total 4.268 tons, making the typical individual a 178-pounder; lightest weighs 135 and heaviest 280, with seven of the bunch over the two-hundred mark. Shortest man stands 5'5-1/2" and the tallest 6'3" (look out for that plane, McGhee). Sixteen men measure six feet or over, with 5'10-1/4" as typical and, stacked end on end, they would make a human flagpole over 281.5 feet high.

Seventeen of the regular crew were born in Montana, six in Nebraska and four in Illinois. Minnesota, Missouri and Iowa each gave us three men; Oklahoma, Washington, Utah, Wisconsin, Massachusetts and North Dakota came through with one apiece. We also find two employees from Scotland and one each from Canada, Sweden, Germany and Luxemburg (we had to look that up, too). All foreign-born employees are, of course, naturalized, and each of them has lived in Montana most of his life. Four out of five mechanics and six of the eight engineers are Treasure State natives.

Forty-four of the four dozen are married, which figure includes all shopmen and all but one of the maintenance crew. We might add that the three young engineers who were single appeared to be slipping at the time of our census.

A total of only ten employees (five engineers and five maintainers) have no children. In arriving at this figure we have trustingly accepted the word of each single employee that he has no offspring.

Counting the progeny we find 105 in all, 61 of whom are daughers and only 44 sons (You explain it; we can't). This gives an average of 1.0 sons and 1.4 daughters per couple. Engineers have 1.2 kids per family, shop men 2.2 and maintenance employees 2.5, and there are nine children in the largest brood. A few stepchildren have not been included in our figures.

Thirteen employees have seen Glacier Park and thirty-four have toured Yellowstone; 15 have visited the Atlantic Ocean and 20 the Pacific. We find that 9 men have seen none of those four points, 13 have been to just one, 12 to two, 11 to three, and only 3 have visited both parks and both oceans. Twelve men heve seen neither Glacier nor Yellowstone Parks, and 3 of those 12 are native Montanans.

We asked each employee what life work he would prefer if he could not continue with the Montana Highway Department; 7 individuals declined to answer; probably because they would prefer to loaf for the rest of their lives. The remaining 41 would be found in 27 different professions; 5 would be cattle ranchers, 4 farmers, 4 electrical engineers, and 3 would be found in construction work. There would be 2 machinists, 2 aviators, and 2 newspaper correspondents (one foreign), and one each as follows: Sports announcer, professional guide and hunter, gladiola raiser, forester, professional traveler, coal miner, detective, insurance agent, accountant, marine engineer, prize fighter, travel bureau manager, game warden, relief administrator, purchasing agent, Mayor of Chicago, President of the Texas Company, and money-counter for a blind millionaire.

When questioned as to their favorite outdoor pastime, several men crossed us up by listing more than one sport, so that our final tabulation shows 30 votes for hunting, 17 for fishing, 4 for motoring, 2 for camping and one each for swimming, trapping, exploring, picknicking, golf and baseball. Employee who would prefer to picnic is a young engineer who has spent so many years eating dry sandwiches under the shade of sagebrush that he probably couldn't handle a knife and fork, anyway.

Our ballot boxes were also stuffed on the question of a favorite indoor pastime, so that we find radio with 29 votes, reading 21, movies and dancing two each, and one each for solo, chinese checkers and sleeping. (Why, Wm.!)

What does the highwayman read? 44% prefer fiction, 36% general nonfiction, 16% news, 2% sports and 2% CENTER LINE. When it comes to radio entertainment 25% listen oftenest to humorous programs, 19% each to old songs and general musical hours, 11% each to amateur contests, news and radio drama, and 4% prefer band music.

Thirty-four employees named their favorite tunes, and if they all happened to be whistling at the same time you would have the pleasure(?) of hearing five versions of South of the Border and two each of Over the Rainbow, Indian Love Call and Home on the Range. Just to complete the

symphony the remaining 23 men would be simultaneously rendering Beer Barrel Polka, Pocketful of Dreams, Blue Hawaii, Mexicale Rose, If I had a Million Dollars, Stars and Stripes Forever, Under the Double Eagle March, America, Old Gray Mare, Sidewalks of New York, Home Sweet Home, Wee Doc 'n Doris, Isle of Golden Dreams, The Rosary, Tales of Vienna Woods and The Sturgeon Song.

We can't help feeling that the last named composition deserves special mention. Introduced into this area by "Monk" Iseminger, it has taken second place only to Neiter's shirt-tail story as a guaranteed ice-breaker at mixed gatherings. Try it youself, to the tune of "Ruben, Ruben".

"Caviar comes from virgin sturgeon.
Virgin sturgeon's a very rare fish.
Very few sturgeons ever are virgins;
That's why caviar's a very rare dish!"

Expecting to find plenty of musicians in the outfit, our questionnaire revealed only two pianists, three violinists, two sax and two cornet players, two harmonica mouthers, one clarinetist and one mandolin plunker. Amazingly, not a single highwayman would confess to proficiency on the cithara, clavichord, dulcimer, doodlesack or euphonium. Anybody want to hire a good, loud band?

Getting back to statistics we can tell you that 43 out of the 48 employees own (or partly own) cars, varying in age from 1925 to 1940 with the average jallopy a 1935 model. Twenty-seven families own or are buying their homes, and 30 raise gardens to help out with the grocery budget each season.

Twenty-eight men use safety razors, 10 stick to the old straight blade and 9 are trying to mow them down with electric gadgets. We have one moustache, not counting the thing J. McG. has just sprouted. (Names would be furnished on some of these matters were it not for our solemn promise to respect individual privacy.)

In the matter of favorite cold drinks, an even dozen men will just take water, thank you. Eleven confess to an occasional glass of beer, ten prefer pop or "coke", five swear by the various fruit-ades while three blissfully ignore the calorie menace and take malted milk. We also have one milk fiend, one iced tea hound and just two guys who plead guilty to liking something a little stronger. Most of us seem to be either damned temperate or damned liars.

Beef proves to be the favorite meat, with pork a close second. Chicken ranks third, turkey fourth, wild game (only in season, of course) fifth, with mutton a poor also-ran in sixth place.

Do you know that the typical highwayman retires at 9:51 p.m. and rolls out at 6:05 a.m. after a short siesta of 8 hours 14 minutes? One fellow usually turns in at eight o'clock each evening, as against 1 a.m. for the Division night owl. Earliest and latest risers smash the alarm clock at 5:00 and 7:50 a.m. respectively, and don't ask us how that 7:50 bird manages to slide to work just under the wire each morning.

Our statistics show that twenty-nine men sleep in pajamas, seven in nightshirts, two in underwear. Seven confess to sleeping raw, one "slightly rare" and two frankly admit that it all depends.

Only nine in the forty-eight predict that the United States will become actively involved in the present European brawl, and just two feel that Germany will eventually get the decision. Guesses as to the duration of the war range from six months to ten years, with our average employee expecting peace at the end of 3.25 years of fighting.

A question as to whom they consider the greatest heavyweight of all time brought the following votes: Jeffries 1, Corbett 2, Tunney, 2, Johnson 3, Sullivan 4, Louis 10 -- and 25 for the old Manassa Mauler Jack Dempsey. (Note to Farry: We still contend hewas a stumblebum.)

All in all, they're a practical, hard-headed bunch, these highwaymen; not an illusion in a truckload. Asevidence we found that only four of them have any faith in the rumor that Paul Redfern may still be alive in some tropical jungle, and just one person thinks Amelia Earhart may be awaiting rescue from an isolated South Sea isle.

Our last query was, "Do you think the guy who wrote these questions is nuts?" The answers? Well, this is yours truly, Dick Stoddard, who just found out it's a mistake to lead with the chin in your own division.

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From "Through the Meshes", published by the W. S. Tyler Company: The United States used to be one great area of free trade. But that situation is changing fast. Liquor and tobacco can no longer move across state borders without paying a tax.

Several states have established "Ports of Entry" at which trucks are stopped. Their loads are inspected and fees levied, under various pretexts".....

Montana, happily, does not have this condition. Our ports of entry are for the express purpose of informing and welcoming tourists. We hope the author of the above two paragraphs will sometime have the opportunity of sampling some of this state's hospitality.

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Stock market rule of a cynic: The time to sell is when you're thinking of buying.

.....

More from children's examination papers: A stethescope is a spy-glass for looking into people's chests with your ears.

To be struck by lightning is an act of God in very suspicious circumstances.

A monologue is a conversation between two people, such as man and wife.

An oasis is a futile spot in a dessert.

.....

IT'S STILL WHERE YOU FIND IT
By
Ray Percy

Bored with the sport of dragging his flat-nosed frau about by her hair and temporarily too full of juicy grubs to be much concerned about maintaining the rotund contour of his bristled belly, a squat caveman once wandered to a brook and just happened to pick up a heavy, yellow pebble--thereby innocently starting something which has, ever since, been throwing humanity into periodic frenzies, shifting large blocks of population here and there all over the world and raising more assorted hell than a strip-tease gal in a Y.M.C.A.

Gold, at any rate, was known centuries before our earliest recorded history and was probably the first metal to be used by man; the first systematic mining, however, being carried on by those races which first attained a comparatively advanced stage of civilization, Persians, Egyptians and Babylonians living in Central Asia and North Africa. Here the accepted mining method was to pin sheep hides on the stream beds in such a way that the silt and gravel would wash over them, leaving the gold to sink into the wool. Hence the legend of Jason and the Golden Fleece.

Golden urns, etc. which were placed in the tombs of old King Tut and other royal Egyptian playboys more than 2,000 years B. C. indicate that the metal was first used chiefly for ornamental purposes. Soon, however, it became a monetary medium and largely replaced sheep, cattle, wives and other forms of livestock for settling large business transactions, relegating them forever to their present small-change status. It was at about this period that Midas and Croesus conceived the income-tax racket which enabled them to accumulate their colossal fortures.

Before long the mines on the eastern shores of the Mediterranean petered out, as mines seem to have the habit of doing, and the rough-neck races living in Spain, Gaul and the Alps were the next groups to possess much of the metal, which then passed into the hands of Rome when that country pulled a Hitler act to conquer most of Europe. From all accounts these old Romans, with plenty of cash, really lived high for awhile; built solid gold statues and threw some of the damndest parties! It didn't last long, though. Wild tribes from the north muscled in, liquidated a few Neros and put an end to the fun. The ancient mines were no longer worked and most of the world's store of gold was soon scattered and lost.

Gold was pretty scarce in Europe, then, until toward the end of the fifteenth century when it began to flow in from South America and from Africa's Gold Coast. A little later on Cortez took the Aztecs for all of the yellow metal they had managed to store up over a period of several centuries.

Soon after humanity broke out with the gold-digging itch a few quite human individuals decided there was too much uncertainty, not to mention actual work, connected with the mining business, and evolved the brilliant idea of making gold from baser metals. Their plan didn't work but old alchemists did lay the foundation for modern chemistry and,

incidentally, for the thousand and one "con" games and sudden-wealth gags which have infested the mining world ever since that time.

Large scale placer mining, with greatly increased gold production, was started early in the nineteenth century, bringing the first of that series of rich strikes and rushes which have sent prospectors, miners, gamblers, bartenders and gold-camp gals rushing back and forth over most of this old globe for the past several generations.

In Alaska or Africa, Last Chance Gulch or Luzon, the world's great gold camps have developed along curiously parallel patterns. Some obscure prospector or chance wanderer, often by sheer accident, makes the original find, decides to keep it strictly on the Q.T.--and within a few days or weeks every adventurous soul within an enormous surrounding area has packed pick and pan, jumped on his horse, camel, airplane or what have you, and headed confidently for the new Eldorado. Shortly thereafter all possible claims have been taken up, miners are shoveling out rich dirt or plain mud and the late arrivals are selling groceries or gin, running public harems or speculating in mining stock. A boom town springs up, fortunes are made over night or lost by a hair's breadth when some miner abandons his digging inches short of wealth.

And then, one day, it all folds up; claims are deserted, pack rats patter over the faro tables, the population dwindles to one oriental sticking to his Chinaman's chance and the few employees of a big firm which will make a good thing of the remaining low-grade ore. Some rumor on a vagrant breeze, from Zanzibar or Timbuctoo, has hinted of a new strike and stampeded the whole bunch toward another chance at sudden riches.

It happened in Australia, when Queen Victoria was a filly, a sheepherder picking up one small nugget to start a rush into the Australian Alps, near Melbourne, where more than five million dollars worth of gold was produced in the following ten years. It was here that the world's largest nugget, one hundred eighty-five pounds in weight and worth more than $50,000 at the prevailing price, was found.

During the following century England was about the only country which didn't have its strikes and stampedes, and each new discovery or rumor sent the miners traveling again. In South America they rushed for diggings in Venezuela, Ecuador and Brazil. European miners high-tailed it to stake out claims in Russia. Gold was found in the Phillipines, North America and Africa where, in the late 1800's, came rich strikes in the Transvall area where the famous Witwatersrand deposit was discovered in 1887. In '96 pay dirt was found along the Yukon river in Canada's Klondike region, and two years later miners crossed the border and uncovered the Nome deposits in U. S. territory--whereupon thousands of our citizens tore madly to our west coast and chartered all available boats, tying up shipping to an extent which would shame a present day striker.

Gold in the United States proper was first discovered along the eastern slopes of the Appalachians, but hell really broke loose in 1849 after word leaked out of Marshall's find at Sutter's Mill in California, and the mining world headed toward the Sacramento Valley via every known means of transportation.

In 1858 a small strike was made in Nevada, only to be overshadowed a year later by the finding of the famous Comstock lode, which combined gold and silver on a 40-60 basis to produce a million dollars worth of wealth during the first five years of its development. Nevada's rush was followed, in 1860 by a discovery in Idaho's Clearwater River, and again the prospectors migrated.

In the meanwhile a French Canadian named Francois Findlay, but generally called Benetsee, found color on Gold Creek, in 1852, in the northeast corner of Granite County, Montana, but abandoned the claim after washing out only a small quantity of dust. Early priests are rumored to have known of the existence of gold in this state and journals of the Lewis and Clark expedition mention some minor deposits, but Benetsee really started the fireworks in our Treasure State.

After that gentleman had given up his claim the Granville Stuart party passed by and found promising color on the same sito but, because of the constant Indian menace and the lack of adequate tools and supplies, they were forced to abandon operations. They returned in 1860, however, and two years later started operating Montana's first sluices. It was then that miners began moving in from the overcrowded and partially exhausted ore districts of Idaho and Colorado, and one John White, from the latter state, hit Montana's first really rich strike in July of 1862, on Grasshopper Creek, which flows into Beaverhead River above the present town of Dillon

Rumor spread that miners in that area were panning dust and nuggets out of dirt shaken from sagebrush roots, and that report produced the usual results--pronto! Bannack City was founded and grew to have a population of 800 before its first winter, with the usual gold-rush quota of joints and honkytonks, and hundreds of prospectors from God only knows where were soon sneaking up and down gulches and burrowing assorted cavities in our grass-covered terra firma.

Henry Edgar found color in Alder Gulch, which developed into one of the world's richest placers and brought the rush which gave birth to Virginia City and caused it to grow to ten thousand inhabitants within a year. Then came Last Chance, Confederate and Emigrant Gulches, Cook City, etc., and Montana became, for a time, the greatest wealth-producing state in the Union, with nearly $145,000,000 in gold pouring from its extensive placer workings during the six-year period following the original development on Grasshopper Creek. Anybody got change for a dime?

Central Montana's gold mining history started in 1879 when a few placers were staked out in Yogo Canyon, Little Belt Mountains, west of Stanford. Although placer mining did not pay in this area it was directly responsible for the discovery of the famed Yogo sapphire deposit, which has produced most of the first-quality blue sapphires in the world. Here, too, was the claim of Millie Ringgold, one of the few woman miners, and of Dan Shelley, negro, who for several years peddled ice cream in Great Falls during the late summer in order to collect enough money to again operate his placer the following spring.

Also in 1879, a free gold was found in Maiden Canyon, Judith Mountains, north of Lewistown. Here, too, placers were unprofitable, but led to the

discovery of quartz veins which paid rich dividends in the Spotted Horse, Maginnis, Oro Fino, Cumberland, New Year and Whisky Gulch Mines. Just over the crest of the Judiths, at Gilt Edge, one of the state's first cyanide plants was constructed. The Spotted Horse paid to the tune of $5,500,000.

Also in this vicinity was the Collar Mine, secured by two easterners in 1882. These men immediately rushed in machinery and supplies via the expensive, but only available, steamboat and bull-train routes. They built a large, costly mill and then thought to start a shaft to see if they had any ore. They didn't.

Soon after the Maiden Canyon discoveries gold was found in the nearby North Moccasin Mountains, where the Kendall, Klondike, and Barnes-King mines soon uncovered Montana's greatest cyanide ore bodies, producing $8,000,000 worth of yellow metal in a twelve year period.

It was Kendall which gave this area its most recent and sensational gold strike when, a few years ago, a Lewistown citizen visited that old ghost camp and wandered into one of the rotting shacks. He broke through the floor boards and, in extricating his foot, found a heavy bar with that intoxicating golden lustre. The treasure was rushed to Lewistown, left in a bank vault overnight (secured by a ten-thousand-dollar receipt) and then rushed to the U. S. Mint at Denver--which concern soon returned an official report that the bar was "pure, unadulterated brass!" One wonders how many mines were sold on the evidence of that gold brick.

Today dinosaur-like dredges, digesting fertile vallye soil and spewing out heaps of barren rock, have largely replaced the more picturesque wooden cradles and sluices. Mining has become largely a matter of science and business, most of the hell-roarin' romance of the old gold camps has gone the way of free lunch with nickel beer, and sons of the old Vigilantes do their crusading at Rotary luncheons.

But it may happen again. Just so long as men continue to have restless feet and a get-rich-quick dream a few of us will be hopefully roaming isolated spots all over the world and, someday, some lone prospector will sink his pick into just the right spot and set off another headlong, delirious stampede to--wherever he found it.

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We won't vouch for this, but Division Nine sleuths tell us that the following was contained in a letter written by our Right of Way Department to a certain land owner, under date of November 29, 1939:

"Dear Mr. _____: If you will be good enough to execute the enclosed deed before a Notary Public, together with your wife, and return it to us in the enclosed envelope -- "

. . . . . .

DIVISION TEN NEXT MONTH ! !

. . . . . .

EARLY DAYS IN DIVISION NINE
By
Charles Cheney

Division Nine has as its headquarters the thriving town of Lewistown, known to old timers as Reed's Fort, after Major Reed, commanding officer of a military troop stationed at the junction of Casino and Big Spring Creeks in 18 to protect the interests of the early traders. The log cabin which housed the first trading post and postoffice still stands as a historical landmark in the southern part of the city. Name of the city was later changed to Lewistown, because of the fact that, to the U. S. Government, the post was known as Fort Lewis.

At that time the settlement was a trading center for the entire country between Great Falls and Billings. Trapping and mining were the main occupations of the early settlers, but freighting also played a large part in their lives, as it was by that method that all supplies had to be brought in from Great Falls.

Bringing in these supplies was a hard and tedious business, a freight outfit consisting of four or more heavy wagons, strung together and pulled by as many as thirty-six to forty head of horses. The horses were driven by the old jerk-line method, which was a job in itself and an art at which very few drivers really excelled. The freighters would load with ore and furs from Lewistown and on the trip back from Great Falls would carry food and all the other necessities of pioneer life including, we are told, many a wagon load of whiskey--which was essential at that time for relaxation and snake bites.

This Division includes most of the territory described by historical writers as Central Montana, taking in the area enclosed by Arrow Creek on the northwest, the Missouri River on the north, beyond the Musselshell River on the south and on to Jordan in the east. Except for the foothills of the several mountain ranges the region is commonly known as Montana's prairie land. Due to that fact the cattle and sheep industries were a leading influence on the early development of this territory. In the early 80's large cattle outfits were moving into the Judith Basin, the Winnett area and the Musselshell Valley. In 1880 Granville Stuart located on Ford and McDonald Creeks close to the old stage station known as Grass Range, bringing with him 5,000 head of cattle from the Yellowstone country. The following year James Fergus located on Armells Creek, Kohr and Bielenburg brought in 3,000 head to Flatwillow Creek, Powers Bros. and Charles Belden settled in the Judith Basin with large herds. Thus began the early cattle companies which flourished until the winter of 1886-87 when thousands and thousands of cattle perished. This heavy loss caused most of the big outfits to dwindle and they soon afterward disappeared.

In 1880 old timers saw the first bands of sheep moving into this region and, in the words of the early cowboys, "you could smell them, too". The Bower Brothers located on upper Surprise Creek, about twelve miles west of Stanford, and for years operated one of the largest sheep outfits in Montana. By 1900 the sheep men were firmly entrenched and making a good deal of money, but in the years from 1907 to 1910 the

railroads came in, land speculation started and most of the large sheep companies were split up, along with the few remaining large cattle outfits.

Then began the era of dry land farming, which has since had its inning in almost every coulee and on every hillside in this entire part of the state. One might judge, from the abandoned shacks and old machinery scattered around, that this venture had been entirely unsuccessful. That was not the case, however, as lots of money was made during the early part of this period, but drought and depression culled out farms and farmers until now only the best are left, and they have had a tough time making ends meet for the last few years.

Division Nine is dotted with little towns whose early history is very interesting, Harlowton, Martinsdale, Twodot, Geyser, Stanford, White Sulphur Springs, ect., but except for a few of the larger ones these settlements have all shared the fate of my present home, Grass Range. This is an old stage station and cow town which, according to local information, once boasted four saloons, two large hotels, three barber shops, two lumber yards, eight restaurants, three livery barns, two wagon yards and one store large enough to require fourteen clerks, to say nothing of numerous smaller enterprises. Comparing the Grass Range of today, after depression and drought, we find one small hotel, one very small cafe, one barber shop, a few filling stations and garages, one two-clerk store--and no saloons. Terrible what can happen to a once-thriving little metropolis.

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WHAT'S IN A NAME?

Egbert Aune, formerly of the Wolf Point Division, was recently transferred to Townsend. He signed a hotel register when a night clerk was on, and the landlady reading the signature as "Eight One" kept a lookout for him. After several days had passed without her seeing him, she notified the town marshal to investigate. Probably thought he was Secret Agent 81.

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Things we never knew till now:

Q. Why is a man supposed to remove his hat in the presence of a lady?

A. The origin of this custom has not been established. Some authorities attribute it to a medieval custom which required that a knight lift his visor in presence of a lady.

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Division Eight had the pleasure of receiving Dale Lince, "Steve" Stephenson, Bill Bawden, Leo Schutnecht, Scott Hart and Guy Johnson all in one week. The Paradise Valley folks are beginning to believe that it pays to advertise in Center Line.

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SIDE SWIPES

BY PSYNUS

Two salesmen introducing themselves to two attractive girls in a hotel lobby: "We're the Chesterfield boys. We're mild, but we satisfy." Sweet young things: "We're the Piggly Wiggly girls, We have everything, but we don't deliver.

Slippery ice - very thin;
Pretty girl - tumbled in;
Saw a fella - on the bank;
Gave a shriek - then she sank
Boy on hand - heard her shout
Jumped right in - pulled her out
Now he's hers - very nice
But she had - to break the ice.

This business of thinking up jokes
Has got up a little bit daunted.
The ones you want, we can't print
And the ones we print aren't wanted.

As if to prive the politicians' view that U.S. citizens don't realize how sharply they are clipped, last week a letter from Citizen A. C. Milligan reached City Finance Director V. J. Murphy of Newark, N. J.

"Please send me a tax bill. I ..have never received a tax bill. As I am earning good money...I fee it my duty ...etc."

Director Murphy obliged Citizen Milligan. The U. S. Collected $1,983, 810,000 in nuisance and excise taxes last year.

Story of the week is about the man who came from a town so small he had to go to Washington to see Mrs. Roosevelt.

Entomologists have occasionally found ancient insects beautifully preserved in hunks of amber, a fossilized natural resin. It occurred to Dr. C.E. Sando (U.S. Dep't..Agriculture) that if a suitable substance could be found, the same sort of thing could be done deliberately. After much experiment he chose Plexiglas, the mixture of monomers which hardens into a glassy plastic. In blocks of this stuff he immured small dead frogs, a tarantula, the bones of a human hand, a rattlesnake's head, (complete with fangs), a peacock feather, an iridescent butterfly, a garter snake, flowers, ears of corn, and barley. Spectators marveled at the realistic look of tiny hairs on the tarantula.

Pecking away at a guesstimated pile of $160,000,000 in unclaimed estates in the U.S. 'Court of Missing Heirs radio program so far this season has told the world about $350,000 awaiting long-lost kith and kin; has turned up two heirs apparent.

In Detriot last week General Motors Corp. celebrated an event - off Chevrolet's assembly line rolled the 25th million General Motors car. Ford was nearing its 28th million and Chrysler had passed its 7,500,000. All together all motor makers of all other nations have yet to build their 19th million car.

Recently the New York Stock Exchange hired Elmo Roper (Fortune Survey) to find out what the U.S. doesn't know about it: Sample findings:

33.5% had owned stocks. In the Rocky Mountain states it was 43.6%.

Of those who owned stocks 27.5% made money, 24.6% broke even, 44.4% lost.

39.6% paid no attention to the stock-market, 23% noticed big changes, 11.6% followed 'certain stocks', and 15.1% followed general quotations fairly regularly.

34.9% thot small investors foolish, 44.6% that only insiders can make much money, 52.1% that speculation was gambling, and 60% that anyone who buys stocks and bonds is speculating.

78.8% were sure that stocks & bonds

of companies are bought and sold on the New York Stock Exchange, the rest answered "no" or were not sure.

23.6% said that if they had extra money they would invest it in real estate; only 11.6% would invest in stocks.

41.6% had no idea whether the Exchange was useful or useless; only 4.8% believed it was a useless institution that should be done away with.

Recently 'World Telegram's Radio Editor Alton Cook scored up the 1939 consensus of about a hundred other radio editors:

Jack Benny was chosen top comedian for the seventh successive time; Fred Allen second; Charlie McCarthy (the people's choice in many listener surveys) third, Benny's Sunday-night program was voted tops with Information Please second.

Other editors' 'musts': Guy Lombardo's orchestra (Glenn Miller 5th, Benny Goodman seventh), Toscanini for symphonies, Bing Crosby for popular songs, Nelson Eddy for classics, Songstress Frances Langford, Sportscaster Bill Stern, Newscaster Lowell Thomas, Studio Announcer Don Wilson, Favorite dramatic program Cecil B. DeMille's Lux Radio Theatre; favorite quarter-hour - Fred Waring's; outstanding 1939 star - blind British Piano Wag Alec Templeton.

Weight for weight the strongest structural material in the world is not steel or any other metal, but 'an improbable sandwich' - two or more thin sheets of wood pressed together with glue between. This is plywood - at least as old as 1900 B.C. - for a mummy case dated thereabouts and discovered in Egypt, was made of it. Until recently the only glue's available were strach glue from tapioca, blood albumin glue from slaughtered cattle and other animal glues. None of these was an adhesive that would really stand up and fight with tension, torsion, or shear.

Better glues were made from casein, a protein ingredient of milk, and from soybeans. In 1912 Dr. L. H. Baekeland, father of plastics, took out a patent on a synthetic resin for plywood filler, but did not start to exploit it until 1932. In 1926 a German Chemist, Dr. T. E. Goldschmidt, developed a filler made of tissue paper impregnated with phenolic resin. This made a bond so firm that the sandwich was stronger weight for weight than steel. It was also waterproof and bacteria proof.

Figures for 1937 put total plywood consumption at 45 million dollars. The figure for 1939 will probably be around 80 million. The stuff is being used for luggage, piano cases, radio cabinets, speedboats, concrete forms, truck bodies prefabricated houses, cinema studio sets boxcars, beer barrels, showcases, jigsaw puzzles, Ping Pong tables, airplanes - on to an estimated 2,000 uses. Plywood is made by putting a big log into a peeling machine which strips off the thin wood sheets like wrapping paper from a roll. When the sheets are cut to size, the sandwiches are madein presses delivering pressure up to 200 lb. per sq. in. The San Francisco Fair, using 10 million sq. ft. of fir plywood, used plywood 29 layers thick for parts of its Colonnade of States.

Prof. K.F. Mather, Harvard geologist, regards the future of man on earth with a good deal of complacency. He expects the world's climate five or ten million years hence to be more benign than it is now. It is true, he observed, that practically none of the placental mammals (of which man is one) has maintained itself as a species for more than two or three million years, with the average about half a million. Since Homo sapiens has already existed for some 50,000 years he has 450,000 to go, if the average applies. Homo sapiens, practically as he stands may beat the average because the vast army of extinct mammals had no control over their environment. "It is sometimes suggested, " said Dr. Mather, "that because man has specialized in brains, brains may cause his downfall, just as presumably the overspecialization in external armament contributed to the downfall of herbivorious dinosaurs. That argument by analogy is..heavily puncuated with fallacies. There is as yet no evidence that mankind is weighted down with a superabundance of intelligence."

Some 1,500 items, including food, soap, silverware, games, toothbrushes, umbrellas, raincoats, valentines and jewelry, have beenlicensed by Disney in anticipation of the release of the Pinocchio movie in February. Pinocchio

books alone will appear in 24 editions by six publishers and will sell more than 12 million copies. Other items range from 5¢ candy bars to $15,000 charm bracelets (made to order).

Rare in the whiskey-drinking U.S., gout is most common in aley Britain and beery Germany. Standard treatment is a diet with plenty of water and fat, especially fresh butter.

They examined the saliva of one hippopotamus, two lions, one baboon, two elephants, one rhinoceros, 28 pigs, two horses, two chimpazens, 50 dogs, eight cats, a rat.

The saliva of all these animals, said Dentist L. Rosenthal in the Journal of the American Dental Association, "was notable for low bactorial count in a mouth bad enough to be nearly human: "a 30 year-old baboon with an extremely dirty mouth from which many teeth were missing."

During World War 1 someone offered the British Government a chemical which, he said, would freeze clouds solid. Guns could then be mounted on the clouds, to ward off airplane attacks. So many ideas of this type were sent in that the authorities got to passing them over hurriedly. The story is still current in Britain that in 1915 a gunner submitted a device for plotting the course of attacking aircraft to increase the accuracy of anti-aircraft fire. In 1918, when he was allowed to demonstrate his gadget, it was adopted forthwith.

Now an Invention Board had been set up to consider all ideas submitted;

Decoy lighting to deceive enemy airplane pilots.

Artillery shells which, on landing, would open and release live venomous snakes.

Artillery shells filled with gravel which would spray muddy terrain in No Man's Land, make a good footing for attacking infantry.

Training sea gulls to spot subs. (During War I the British did try to train seals to hunt subs).

A huge beam of 'black light' to black out the moon, thus deny moonlight to nocturnal air raiders.

Some U. S. War patents:

Artillery shells filled with thermite and temptingly abandoned. When the enemy tried to fire the shells the thermite would burn at 3,000°C, ruin the guns.

A torpedo which, if it misses the target ship on the first try, turns around and tries again.

Hugh whirling screens to intercept bombs aimed at battleships or buildings, toss the bombs aside by centrifugal force.

A rifle with a curved barrel, which a soldier could shoot from a trench without exposing himself.

Huge electromagnets to draw submarines to the side of a battleship, where the submarine's crew would be electrocuted by an electric current sent thru the hull.

And a final rumored idea:

To train cats to direct submarine torpedoes. Riding on the torpedo's back, in a little turret-like compartment, the cat would fix its gaze on the target ship. By a photoelectric hookup the angle of the cat's head would aim the torpedo.

It is a glove which looks like a hand's pattern jib-sawed out of a board. It is made by sewing an identical back and palm to a leather ribbon edge. Loose and easy on the open hand, it bunches a bit when the fist is closed. Its beauty is that if one glove is lost, a neuter single can be bought. Die cut, it requires less labor to manufacture but uses up 100% more goods. An estimated million single gloves are lost a year.

In Catherine the Great's palace was the mechanical wonder of the age: laden banquet tables which, on command rose or sank thru the floor. They were manipulated by a 'forest of human hands' whose owners stood waist-deep in the habitually flooded basement. Frequently the ropes broke, the table dropped, the operators were crushed to death.

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Washington: The only place where sound travels faster than light.

.....

SOL

By

Georeg Nugent and Bruce Iseminger

This cold weather has put us to thinking plenty of what is going to happen to our earth. Not too much thinking you understand, but just enough wondering as to whether or not the winters are getting colder or warmer each year. We've listened to stories told about during the 20's when 52 below zero was warm weather, and men didn't think anything about staking a mile a day in such conditions. Let's see just how our sun has been percolating these last fifty years.

The astronomer has divided the sun into definite concentric regions or layers. These layers envelop the nucleus or central body of the sun somewhat as the atmosphere envelops our earth. Of the innermost region we know almost nothing. These outer layers are composed of hot, surging gases which are burning at unbelievably high temperatures calculated to be from 5000-8000 degrees C. and the interior is much hotter. Chief among the glowing gasses is the vapor of hydrogen which is driven outward with great force and reach distances up to 500,000 miles from the sun. During the eclipse of 1919 a picture was taken showing such a flaming jet.

Do these gases burn or glow as we know combustion? Science is sure that is not the case, the sun is not burning. Instead, this heat is produced by chemical reaction between atoms. If the sun was burning as coal burns, then in a few thousand years it would burn itself out. And, there is evidence that the sun has been emitting light and heat in the same quantities for millions of years.

We cannot avoid the issue of the source of the energy by saying merely that the sun is gradually radiating away an energy that originated in some unknown manner away back at the beginning of things. Reliable calculations show that the years required for the mere cooling of a globe the size of the sun could not run into millions. In other words, the sun's energy must be continuous, and however it acquired its enormous energy in the past, it must have some source of energy in the present.

The best explanation that we have today of this continuous energy is that it is due to the shrinkage of the sun's bulk under the force of gravity. Gravity is one of the most mysterious forces of nature, but is an obvious fact that bodies behave as if they attracted one another and Newton worked out the law of this attraction. We may say that every particle of matter attracts every other throughout the universe. If the diameter of the sun were to shrink by one mile all around, this would mean that all the millions of tons in the outer one-mile thickness would have a straight drop of one mile towards the center. That is not all because obviously the layers below this outer mile would also drop inwards, each to a less degree than the one above it. What a tremendous movement of matter, however slowly it might take place, and what a tremendous energy would be involved. Astronomers calculate that the above shrinkage of one mile all around would require fifty years for its completion. Since the diameter of the sun is 866,400 miles we need not fear freezing to death for quite awhile.

Having disposed of the sun in regard to diminishing heat supply, we can now turn to the subject of cycles. We know that the earth as well as the solar system is governed by rhythm, that is, we have seasons, days and night, changes in the moon each twenty-eight days. Similarly we have changes in a weather cycle. Some of these periodic cycles are short while others are long as is illustrated by the Ice Age. As early as 1843 a German astronomer showed from a record of observations of sun spots which he had kept during the preceding twenty-seven years, that the spottedness of the sun was variable in a period of eleven years.

Astronomers have concluded that short periodic changes in the rhythm pattern of our universe are nothing unusual. They are just as natural as the periodic changes in seasons each year, and when some of the older fellows tell you of the days when it really got so cold that the thermometers began to shiver, they might not be so far wrong. We will probably pass into another such cycle in our lifetime and enjoy telling our grandchildren of how tough it was to stake a mile a day in 60 below weather.

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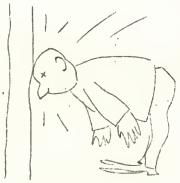

USE YOUR HEAD

A woodpecker pecks out a great many pecks
Of sawdust while building a hut,
He works like a nigger to make a hole bigger
And he's sore if his pecker don't cut.
He doesn't fool with plans of cheap artisans,
But one thing can rightly be said -
The whole excavation has this explanation,

He does it by using his head.

.....

The origin of the word "fan" as used in the sense of "baseball fan" is believed by some authorities to be an abbreviation for "fanatic"; namely, a "fanatical admirer" of a particular sport. (Just in case anyone was wondering).

.....

And just to fill out this page we might go on to say that the phrase which we all use so often -- "O.K." -- is a contraction of the Chocataw word Okeh, meaning "it is so." (Gee, Mister, how do you do it?)

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Well, we'll be darned -- the page isn't filled yet. Where are all those news items from you other divisions?

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7 MA-26
By
C. W. Marvin

The writer, having just returned from the Deep Creek section house where he spent some time checking over, and also admiring, the Sno-Go plow stationed there, has sort of drifted back to some of the earlier experiences in snow removal work out of Great Falls at a time, not so long ago, when snow removal equipment first began to appear on the scene and roads to plow were almost as scarce as proper equipment with which to plow them.

In the winter of 1928 some attempt was made at removing snow, especially on the Great Falls-Belt road, but as no plows were on hand then work was limited to what little could be accomplished with a truck and grader, and no great amount of success resulted.

In the fall of 1929, however, some real snow-fighting equipment began to appear and it is remembered what a thrill everyone experienced when it was announced that a blade plow, and also a rotary, had been purchased and would be on hand for use that winter.

At that time no one stationed at Great Falls had ever had any experience in that type of work, nor were we so well acquainted with the amazing imaginations of most snow-equipment salesmen as we are today; consequently, when it was announced that this rotary plow would remove almost any depth of snow while moving at a speed of from ten to even twenty miles per hour, the tale was swallowed, hook, line and sinker, and we all settled back with comforting visions of an easy winter ahead.

The machine arrived in due time and after it had been hooked up to the truck it was taken for granted that everything necessary had been done, and everyone began to look forward to the day when it could be taken out and put to work. All information being that the snow moved by this unit would not only go high, but also far, such minor details as furnishing any sort of protection for the truck motor or operators were entirely overlooked--much to our later sorrow.

And while we're on this subject we'd like to ask if anyone ever discovered the source of all those beautiful pictures which showed such plows in action, with snow moving out in a perfect pattern from both rotors and self-satisfied operators sitting warmly in their cab with miles of perfectly cleared road behind and, apparently, not a care in the world. Up to the present time we have never received what we consider a satisfactory answer to this and, as we are beginning to doubt that we ever will, it may be just as well to forget the subject and get on to the actual happenings.

The storm which everyone had been eagerly awaiting soon came, and the time arrived when it was thought right and proper to take off and demonstrate just how snow should be handled. The writer happened to be the lucky (?) man selected to drive on this maiden voyage and, with another poor soul as plow operator, headed east, closely followed by all of the Great Falls Highway officials, about a dozen salesman and a sizable block of local citizens--all of whom expected to arrive in Belt, or even Monarch, within an hour or two.

The first five miles of the trip were made in fairly good time, perhaps due to the fact that the road was bare, but just beyond the Stockett-Sand Coulee junction snow began to appear, with more coming every minute on a good, stiff wind. The plow, accordingly, was lowered, rotors put in gear and, while everyone breathlessly watched, we tore into the first drift.

Our education never did progress very far in this matter of blowing snow up against the wind, but what little we ever did get began right there. Some snow from the left hand rotor did actually leave the road, due mostly to the wind, but fifty percent of that drift came into the truck cab and what little was left soared straight into the air and again settled down on the road ahead of us.

This, of course, resulted in a total loss of vision as well as a lot of other ailments, so, after progressing about twenty feet (which we later learned was too far for one blast) the operators dug themselves out of the cab and a consultation was held during which each spectator had at least one suggestion to offer which, he was confident, would cure all our ills.

These suggestions, well meant but of doubtful value, ranged all the way from changing spark plugs to removing the rear wheels, and after making every possible preparation the plow was started again. Results were the same as before, only more so, as this time the carburetor got full of water and the mag was so thoroughly wet down that everything stopped entirely.

This caused a slight delay but the water was baled out in a couple of hours and, after wrapping the mag, carburetor and spark plugs in assorted sacks and rags, the journey was again resumed. Unfortunately, no one had thought to provide anything in which to wrap the operators so our part of the performance from then on was carried on under conditions about half-way between a blizzard and a flood, and the only thing left to be thankful for was that the cracks in the cab let in enough cold air so that part of the snow which blew in didn't melt.

Subsequent progress was confined to ten-foot spurts, with time out between to see where to jump next or decide just which borrow pit we had landed in, and our speed limit began to drop quite rapidly, with most everyone ready to admit that fifteen, or even ten, miles per hour was a little too fast. We eventually slowed down to five, then two miles per, and sensed a growing suspicion among our cheering section that they might never reach Belt at all.

We finally arrived there, however, at about five o'clock in the afternoon, and after everyone had dried off and had something to eat another conference was held during which it was decided that the plow should go on to Monarch that same evening. It so happened, after this decision was made, all of our audience immediately developed an urgent case of business back in Great Falls, and it was left to the operators to stagger through that part of the trip alone.

Much more could be written of this little jaunt as well as of several others during the same winter, especially trips which were necessary after the Department ran out of cash and was forced to suspend

all operations for a matter of two weeks while all roads drifted in again, but as even a recollection of this seems to have a definite chilling effect we are in favor of dropping the whole thing and spending our time enjoying the rather mild weather Division Nine is now experiencing.

Doubtful as it may seem, however, some little good may come of this outburst, as it has at least brought to mind one little job yet to be done, so we're going to dig our old rotary out of the moth balls and, with tacks and weather stripping, try to plug up any and all cracks or knot holes in the cab. After doing that, and playing wet nurse to the extent of putting rubber diapers on the spark plugs, coil and distributor, we're planning to call the entire shop crew together and advise them that part of their daily duty will be to offer a morning prayer--that all our snow storms shall be little ones, and that old SP-26 shall get the rest she deserves for her remaining years.

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SIGNS OF THE TIMES

While rolling gaily down the road,
(Your speed some faster than the toad)
Would you avoid those pesky fines?
Then take this tip and mind the signs.
If to caution you're a stranger,
My dear, note this one -- it spells

An excellent test of skill
and nerve
Is the way you take a compound

Your driving you may be shirking;
Give a blush of shame, for here's

If o'er a crossing you must go,
For your family's sake, please do it

But when all is said and done, the greatest curse on motor fun
Is the upraised hand of the motor cop, when he says, "Pull over, you, and

....New Mexico Magazine

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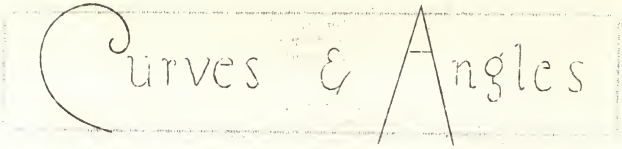

PEG O'GRADY is another who enjoys winter vacations, only she prefers the sunny south. On February 17 she left by plane for California where she plans to attend the horse races at Santa Anita and also spend some time in Mexico.

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SALLY BERG, of the Planning Survey, is back on the job with a very sylph-like figure. She says that is the only compensation for being ill.

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The ski bug has bitten EDITH DEVLIN, too, and she promises to be in a class with her sister, Elizabeth Baldwin, which is going some. Elizabeth is trying out for the Northern Rocky Mountain Ski Association competition in Anaconda on March 2 and 3.

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MARY DIMICH spent the double holiday over Lincoln's birthday at Red Lodge. It seems to us that she makes a lot of trips down that way. Are you sure it's your family you are so eager to see, Mary?

* * * * * * * * *

It certainly takes a master mind to figure out some of the letters that come to the Highway Commission. The following was received by the Right of Way Division and we challenge you to decipher it:

> "I send the anser to your letter a week a go tue the Commissioner of State Land the same as wie agreed ef your Highway Inginer wary out hear.
>
> The money for the land soll goe tue the State and the Money for fence granery moving and for the cattlepasse soll be paid tue me. I hope this is correct licke wie agreed."

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MRS. HORACE WILLIAMS, wife of our chief draftsman in the Plans Division, has again been taken to the hospital for further treatment.

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RUTH MOORE, of the Bureau office, apparently has some attraction in Great Falls as she spent the double holiday over there.

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We wonder if it is the same girl in Wolf Creek who claims so much of JOE DAVIS' time. Too bad you have to miss out on skiing parties, etc., Joe.

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ANN WILLIS LYNCH has plenty of pluck when it comes to skiing. You should have seen her riding the tow and practicing turns at Lost Cabin.

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When E. O. PARSONS, Right of Way Engineer, goes out on a field trip, he really is determined as shown by the following excerpt from the register in which his itinerary is given:

Date	Name of Agent	Designation	Project No.	Object of Trip
2-17	E. O. Parsons	Butte	4-3	Dorothy Brown

(NOTE: He came back with the parcel closed, too.)

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The following two compositions were submitted by the wives of men in the Lewistown Division. Thank you, Mrs. McGhee and Mrs. Percy, we are indeed grateful. Now, Bozeman, it is up to you to do as well in the next issue.

ENGINEER'S WIFE

By
Elaine McGhee

Am I glad I married an engineer?
Gather 'round, girls, and you shall hear
Of a maiden 'way back in twenty-eight
Who married one --- and sealed her fate.

Courting was done with the help of the Lord,
Riding fifty degree curves in an old "T" Ford.
Married at ten on New Year's day,
People said 'twas starting the year the right way.

Many years have passed since then
And I've learned a lot since 'way back when!
We spend all twenty-four hours of the day
Living hectic life --- the engineers' way.

I've put up with golfing, tennis and such,
I've listened to fish tales, not minding too much,
But the subject that I love most to hear
Is about the hard life of the poor engineer.

When I say to Jack, on a bright holiday,
"Let's lunch in the hills where the kiddies can play."

Pa says, "Why drive out to some shallow creek?
Doncha know I get tired of riding all week?"

Oh, these engineers are a very queer clan.
My mind isn't my own; I can't make a plan.
If I protest, which, believe me, I can,
Says Pa, "Serves you right for marryin' this man!"

Mrs. Percy may say, "I'll not do it again."
But women have changed their minds, now and then,
And though her ideas are different, I hear,
I just don't believe her; she loves HER engineer!

And, girls, if YOU marry a young engineer
Your days will be full, you need never fear.
And you will not ask so much more of life
Than just to remain an ENGINEER'S WIFE!

* * * * * * * * *

ENGINEER'S WIFE

By
Nenette M. Percy

It has taught me many lessons. The first few years, with frequent movings, were packed with new thrills, new holds and clinches. We learned all the how's and when's of the Saturday night dunking in cramped quarters; that it is "not where one lives, but how" that counts, and that a shack can be made into a sanctuary where one may renew one's self each evening from the rigors of a day in the field.

We learned that two tin pans, a frying pan, a percolator and a few cracked dishes will furnish good and fattening pasture at all seasons and under all conditions. Their scantiness and quality relieve one of all sense of burden when the word comes to move to a new field, so one is almost a carefree "Knight of the Road."

The process of putting on the nosebag is very habit forming. In fact, in a few months an "Injun" or "Injuneer" becomes a nosebag addict. This addiction causes him to leap from the bantam weight and easily managed class to the heavyweight division. Then, despite a wife's anxious protests, the "Center Line" begins to experience trouble with "dangerous curves" and shoulders that bulge because of too much overhauling detract from the scenic beauty.

One "Injuneer" in such a state has taken a keen interest enlarging and pefecting my favorit recipes, until he has wrested from my hands the soup ladle, the salad bowl, the bean pot--in fact, the culinary department is no longer my domain. About all that is left to my lily white hands is bed making, dusting, and putting the pooch out in the evening to read the messages from the vacant lot on the corner.

I would never again marry an engineer because in all probability I could never corral the old "maverick" I now have and, after all, he is the one I am most interested in despite the many wonderful types I have been privileged to view.

What I am trying to impress on my readers, is the fact that I have become a pampered, fattened, lost-my-girlish-figure woman. But believe me, it has been, and is, a lot of fun.

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FUN AT A WINTER PLAYGROUND

By Verna Danforth

On a recent Saturday afternoon twelve enthusiastic, light-hearted people set out for a week end of skiing at Lost Cabin, approximately twelve miles north of Avon. They were very gay and looked forward to an exciting time at the winter playground where only two of the party had been before.

At Avon they were met by the proprietor of the lodge and transferred some of the baggage, skis, etc., as one car was left there while the other two drove on further into the mountains. Eventually the point was reached where the "all out" cry was heard and everything and everyone was then transferred to the tractor-drawn sleigh, equipped with a little house, on which the remainder of the trip was made. Due to the deep snow in that vicinity it is impossible to drive into the lodge with a car; thus the tractor is made necessary. With much merriment everyone piled on to the sleigh after all the skis, poles, bags, etc., were accounted for and were off on the last lap to Lost Cabin. Some sat inside the little house around the stove warming their chilled bones, while the others rode outside watching the coyote running along not far in the distance and glorying in the beauties of nature. The "camera man" was busy running ahead to get shots of the party, and soon he was seen proudly seated in the driver's cab steadily guiding the tractor in its progress through the trees with their branches heavily laden with snow. Not to be outdone, the "Eskimo", with his fur-lined parka, next had his turn and glanced back occasionally to see that everything was all right.

Up, up, over a ridge, through a gully, on and on they traveled. One by one the skiiers filed inside to get warm, smoke a cigarette and talk excitedly, and then out again to feast their eyes upon the wondrous scenery. Through a gate, around a few turns, up and down and then - Lost Cabin! "Ohs" and "ahs" escaped from everyone's lips as they bore down upon the lodge set back midst the towering evergreens, with smoke curling lazily from the chimney, and entirely surrounded by its deep snow banks. Suddenly the rustic slab door flew open and a cheery "Hello, everyone" came from a smiling, pretty brunette, the wife of the proprietor. Everyone scrambled off and into the lodge with cheerful greetings and gazing awe-struck at the marvels of the interior. A massive fireplace of stone in the large living room cast off bright flickers from its burning logs, a mounted bear looked down from one end of the room, a deer head from the other, rifles and pistols were everywhere on the walls, a huge ox yoke hung from the ceiling, the "Blacksmith Shop" containing the radio stood near one wall, and the comfortable rustic davenports and chairs soon claimed the guests.

The hungry people seated around a long table at dinner soon devoured the sumptous food, and then hastened out to try the hill that

looked so inviting. Up the tow they went to the top, and then downhill, snowplowing, stemming, with a tumble here and making a surprise "Christie" there.

"What's the matter with the tow, it's slowing up. Oh, get off and climb, you're too heavy." Then off came the governor and up they sped, coming down time and again in follow-the-leader fashion, some on this run and some on that, falling, laughing, up again and down.

It wasn't easy for the group to stop their fun, but a big day loomed up for the morrow and finally the last one gave in.

"What time would you like breakfast"? asked the proprietor.

"5:30", said the "camera man", "I want to start skiing early."

"7:00", said another, after the "booing" had ceased. "We came out here to ski and you can sleep at home".

With an "I'll call you at 8:30 and breakfast will be at 9", from the proprietor, everyone seemed satisfied at last and trudged off to their bunks.

Promptly at the allotted hour the sleepy-eyes guests were aroused and soon came the call, "First call for breakfast". A near-stampede ensued when the again-starved skiiers smelled coffee, bacon and buckwheat cakes.

"There is plenty of batter, so eat all the hotcakes you can hold."

"Have another egg, that's only your second".

"Nowhere else could food ever taste so good".

"Yes, thanks, I would like more coffee".

When they did leave the table they were too full to ski and spent some time taking pictures, exclaiming over the view from the front windows of the lodge, and getting parkas, mitts, etc., ready to go. At last the first skiiers started out. The tow was in operation and up they went one by one, breaking new trails downhill as the snow had been falling all night.

"You're doing fine, but get your weight off your heels".

"The snow is too soft and deep for a good Christie yet".

"Bend your knees and shift your weight. No, not that way, let me show you".

"Shall we play follow-the-leader again? O. K., you lead".

"that's better, keep it up".

"Everyone line up at the top of the tow and I will snap you coming down hill", said the camera man. "Then go back up on the tow and

I will get another picture there". "O. K., now line up here and act natural, and don't all of you show your teeth at once".

"We had better go in and rest for awhile before dinner, it doesn't pay to get too tired".

"But I'm not a bit tired and I don't want to go in".

"It doesn't matter, you soon will be and you can't ski well when you are".

Gradually they gave in and peeled off their soaked mitts, parkas and boots to dry, and relaxed before dinner. Later they were to have their last try on the hill before starting home.

"It's odd, I wasn't a bit tired when I came in and now that I am sitting around this cozy fireplace I am beginning to feel drowsy".

"Boy, is my shoulder lame from that tow!"

And then came the summons for dinner and another rush for the table.

The last hour of skiing following dinner passed altogether too quickly and it was with many misgivings that the skiiers trudged back to the cabin to pack their bags and prepare to leave.

Two of the die-hards refused to take off their skiis and started the trek homeward, stopping now and then to drink in the gorgeous scenery that no words could ever describe. After about two miles of cross country skiing they were overtaken by the sleigh and climbed on.

Back over the course they had taken the day before the group went on and on until they reached the waiting cars and set off homeward bound, some with perhaps a few bruises and stiff joints, but all very happy at having spent such a perfect week end.

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THIS SPACE FOR RENT

This space was formerly occupied by Division Eight, but due to the wear and tear and strain of producing an issue of "Center Line" we offer our portion to any interested person or persons -- free of charge.

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WESTERN GARFIELD COUNTY

By

H. L. Neiter

Division Nine extends only thirty miles into Garfield County and that part along the highway is the least picturesque of all. It is in the Musselshell and Missouri breaks that one can find the real bad lands and see what nature has done by erosion through the ages.

The Musselshell breaks are not as rough as the Missouri, even the names of the creeks showing this. Along the Musselshell are Sage Hen Creek, Calf Creek and Lodge Pole Creek, while on the Missouri we find Devil's Creek, Hell Creek and Seven Blackfoot Creek, so named because of the seven Blackfoot Indians who were hung near the mouth of this stream. The last three mentioned creeks are especially interesting, with spots where one can stand on the rim and look down into a maze of canyons to the floor about one thousand feet below where the Missouri River flows. Canyon walls, in some places, are almost perpendicular and one wonders how stock can get down into the canyons and, once there, how they can be herded out again. Extensive hay meadows are found at the lower ends of the Missouri breaks and these were once noted for the prime alfalfa seed raised there.

Because of the meandering river and rough terraine neighboring farms here may be only a mile or two apart, via horseback, but eighteen or twenty miles by team or car. A few ranches cannot be reached by car, and roads have been built to many only within the past few years. Most threshing here must be done during the winter, when machines can be moved along the river ice, and supplies to one ranch on Blackfoot Creek must all be carried in by pack horse.

Probably the first settlement in this territory was old Fort Musselshell, founded in 1860 on the Missouri River at the mouth of the Musselshell. This was a fur trading post as well as a camp for the wood choppers who supplied fuel for the early day Missouri steamboats. Many of the old trappers made this settlement their summer hang-out, and it was the scene of frequent skirmishes with the Indians who sneaked up to try their markmanship on any unsuspecting white who might venture too far from the fort. It was here that "Liver Eating" Johnson is supposed to have performed the gastronomic feat which earned him his nickname, and trappers had the walk alongside the steamboat landing lined with Indian skulls on sticks as a novel sight for the eastern tourists of that day.

The country between the Missouri and Musselshell rivers was fine range and it was here that Montana's last great buffalo herd roamed. In the 1870's this area was a favorite hunting ground for the Blackfoot, Gros Ventre and Assinboine tribes from the north, and the Crows from the south. Indians knew the Musselshell as the "Dried Meat River" and it was in this vicinity that they arranged for their winter grocery supply. Meat was dried, ripe chokecherries picked, dried, ground and then mixed with the meat to make the Indian pemmican. By 1883, however, the buffalo had almost disappeared from this region.

In 1880 many large herds of cattle from overstocked southwestern Montana were moved to the Musselshell. A few years later some of the thousands of cattle which reached Montana over the Powder River Trail found their way to this section, and as a steady stream of homeseekers following the N. P. Railroad spread over the country tributary to the Yellowstone large stock outfits retreated to the vast Garfield area where, it is said, the cattle baron made his last stand.

Rustlers followed cattle, of course, and the Musselshell and Missouri breaks were made to order for their trade. In 1883 stockmen tried to secure legislation to help them locate and punish the horse and cattle thieves, but they secured nothing but the hint that they were big enough, and rich enough, to look out for themselves. So, in the summer of 1884, they took matters into their own hands and bands of heavily armed men were seen riding through this territory, and after their departure many cottonwood trees were found bearing fruit not placed there by the hands of nature. It was in this year that stockmen surrounded 15 horse and cattle thieves near the mouth of the Musselshell and shot it out with them. Ten rustlers were killed in the fight and the five who escaped were later caught and hanged. Two hundred eighty-four valuable horses were recovered at this time.

These direct methods had quite a restraining influence on the rustlers. It is often believed that the stockmen's organization was part of the old Vigilantes of western Montana, but there was no connection between the two except for the similar manner in which they meted out justice. It is probable that the frontier justice of the stockmen claimed fully as great a toll of lives as did the swift action of the miners' organization in Vigilante times.

About 1898 Garfield County's first post office was established at Mosby, where Highway 18 now crosses the Musselshell River. At first mail service was only once each month, later once a week, then was increased to the present thrice-weekly schedule. Mail formerly came down a road along the Musselshell banks from the main line of the Milwaukee, and had to be carried most of the way on horses. It now comes over Highway 18 from Winnett to Jordan by truck.

In 1910 came the homesteaders and the next four years saw the population of Garfield County increase over 500 per cent. This ended the large stock ranches. Numerous country stores were started and mail lines and post offices were established all over the county. Sand Springs was the largest inland town in western Garfield County and at one time boasted a post office, two stores, two newspapers, a flour mill, blacksmith shop, restaurant, hotel, pool room, dance hall and real estate loan office. The latter was the most popular and almost every homesteader took a loan as soon as he could prove up, thus selling his homestead to the mortgage company. The two newspapers made their money from final proof advertising for homesteaders who were proving up on their land. When that was finished so were the newspapers.

In 1919 the exodus of homesteaders started, and today there are few of them left as compared to 1915. The newspapers, stores, etc. have closed and have been moved away until very few buildings remain. Sand Springs now consists of one store, post office, blacksmith shop and dance hall, and the latter is little used. Where the people came up to 40 and

50 miles by horseback or team to attend dances in the early days, often in below-zero weather, they now come by car, mostly from adjacent towns, and the crowd is small compared to earlier times when whole families attended, babies and all packed into lumber wagons, and stayed to dance until daylight.

A few of the old timers are left, many of them Texans who came to the country when young men with the cattle herds.

Until 1919 Garfield County was a part of old Dawson County, and Glendive was the county seat. Garfield is an inland county, without a railroad, and it was unhandy for the inhabitants when they had to go to the county seat, as most of them had from 200 to 300 miles to travel. So Garfield County was formed in 1919 with Jordan as the county seat.

Large fossil beds lie in the breaks along the Musselshell and Missouri rivers and many eastern museums send field parties to explore this area. Most natives do not consider the paleontological specimens to be of enough interest to warrant their collection, but Frank Looke, at the head of Devil's Creek has some very fine specimens and "Doc" Sensiba, on Hell Creek, sold a collection for $500 and the buyer sold them to Field Columbian Museum of Chicago for $5000.

Stock grazing and farming are principal industries of western Garfield County. There are a few deposits of lignite coal, but they are not extensive enough to mine. The timber is mostly cottonwood along rivers and creeks, with scrub pine and cedar on hills in breaks. A few oil wells have been drilled on the eastern side of the Musselshell, but these have all proved to be of the type which Mr. Percy and Mr. McGhee invest in.

There is some good fishing in the Missouri River, and in the Musselshell at times. Catch is mostly catfish, pike, bullheads and ling. Coyotes and bobcat are the main fur bearing animals and there are still a few old timers who make their living by trapping. Antelope and numerous deer are found in the breaks, with sage hens and prairie chickens also plentiful.

Climate is one of extremes, with the government thermometer having recorded 60 below and over 100 above, in the shade, in the same year. On the average there is little snowfall, but some seasons bring enough snow to block all roads and cause considerable trouble opening the highway. At such times all travel is by horse and it is doubtful if that animal can ever be fully replaced by the auto here. In February of 1936 a rancher north of Jordan died suddenly when all roads were blocked and the thermometer around 60 below. The wife buried her husband in a snow drift until she could obtain help and roads could be opened so the body could be taken to the cemetery. Average yearly rainfall is about 12.63 inches, but now and then comes a cloudburst which makes one think it is all coming down at once.

Anyone wishing to leave the highway and travel through and around the breaks will always find the residents hospitable and glad to furnish directions or, if necessary, to go along as a guide. I think a trip into the breaks would be worth your time and pleasure.

YOGO SAPPHIRE MINE
By
Jeane Rogers

One of the richest sapphire bearing districts in the world today is situated in the United States, in Fergus County, Montana. The property, known as the "New Mine," is owned by the New Mine Sapphire Syndicate, a company registered in the State of Montana, but controlled by English financiers with headquarters in London. The mining property of the Syndicate has an area of, roughly, 1,250 acres, covering the sapphire lode for a length of 3½ miles. "New Mine" sapphires have been known also as Montana sapphires and as Yogo sapphires. The location of the mine in the Yogo Valley is sufficient explanation of this.

The Yogo Valley lies in the Little Belt Mountains, 5,000 feet above the sea. In the vicinity of the mine the scenery is wild and almost desolate. A "gold rush" peopled the upper portions of the valley in 1879 and four adventurous spirits decided in 1894 to prospect the lower water courses and coulees on the assumption that the gold would have been carried from above. After a few months prospecting the deposits proved too poor to work at a profit. Among their possessions was included a cigar box full of blue crystals collected from the clean-ups which were recognized by a New York expert as sapphires. By this discovery the miners turned their attention from gold to gems. Placer gold is found on the property of the "New Mine" but in such small quantities that it does not pay for extraction.

Mr. F. H. Lathbury, A.I.M.M., an eminent mining engineer, visited the mine and in his report stated that "The ore deposit fills a nearly vertical fissure in a horizontal series of limestone rocks. The filling is composed of basic intrusive dyke, together with quartz veins and segregations of calcite and iron pyrites....The sapphires are found in the dyke rock." Dyke rock is similar in substance to the "blue ground" or diamond-bearing clay of South Africa. The occurrence of the sapphires shows quite conclusively that they were formed in the dyke rock itself and their origin is believed to be the result of the action of molten igneous rock upon fragments of clay shale, or impure limestone, taken up by the former in its ascent. The average width of the dyke is eight feet between the walls and extends a considerable distance in depth; the limestone formation in the neighborhood is known to be thousand feet thick and to rest upon nearly a thousand feet of Cambrian shale.

Dyke rock was extracted in the first instance from surface cuts. Pay dirt was hoisted in a primitive manner in bucketfuls by hand windlasses, or was reduced by hydraulicing. As practically no timbering was done, thirty feet was the utmost depth to which the cuts could be worked in safety. Tunnels were next cut in and the ore extracted on much the same plan as that adopted at the cornish tin mines by the Phoenicians. In 1903 a shaft was sunk on the Blue Diamond Claim and machinery installed. Mining operations have since been carried on in the orthodox manner.

When freshly brought to the surface the ore has the appearance of a hard and fairly compact rock, with a slightly blue color tinged with green, this latter shade being due to the presence of yellow pyrites in minute particles. The sapphire crystals are distributed throughout the ore with no great profusion; weathering and washing

operations on a large scale are required for their extraction.

Owing to the severe winters experienced at the altitude of the mine, washing operations are possible during the summer months only. Underground work is pursued throughout the winter, the ore being raised and accumulated on a huge dump heap at the pithead. The trucks containing the ore are raised direct from the shaft to a platform and wheeled out along rails laid over tall trestles. Originally the dirt was dumped on the bare ground; it is now laid on a wooden "floor." All the washing operations are carried out on "floors," the total area of wood being over 100,000 square feet.

The ore remains on this floor for some time in order that it may break up by natural weathering. Frequent sprinklings of water and steam from the hoisting engine are directed on the dump to hasten the disintergration of the harder rocks and to assist in the slackening process. With the approach of spring and the washing season, streams of water, conveyed from the Yogo creek by the flume, are led against the side of the slacked ore dump, and the ore is washed into the sluices. The larger rocks are returned to the floor for further weathering, while the pay gravel is passed over a series of riffles or gratings in which the sapphires, and other minerals having a high specific gravity, concentrate.

The coarser tailings from the first sluice are discharged into a dam, to be again stacked into a dump and given a further season's weathering. Ultimately this dam is sluiced out over riffles, and the larger pieces of ore which still resist decomposition are again collected in dam No. 2. Here it is given another season's exposure to the weather and is sluiced over another series of riffles to a third dam. From time to time the third dam is sluiced out and the tailings are allowed to run to waste.

Sluicing is suspended four or five times every twenty-four hours; the riffles are lifted and the concentrate cleared and washed in a hand rocker. The rocker is a series of shallow sieves with the screens graduated from large to small. The larger sized siftings are hand sorted on the mine, and the gem crystals sent to London for grading and cutting. The finer concentrate is passed through a separating machine. This machine has a soft iron roller charged with static electricity; as the gravel and gems pass over this, the gravel is thrown off while the sapphires drop into a collecting trough. All the rough gems pass through the London office before being cut and sold.

The lion's share of the mine's product returns to the United States as polished gems. The smaller crystals, which from colour or size are unsuitable for use as gems, find many scientific and industrial uses. They are manufactured into jewel-holes and bearings for watches, clocks, delicate machinery and scientific instruments.

Until comparatively recent years the world's supply of sapphires came from the East. India, Ceylon, Siam and Burma produced these gems in various quantities and markedly different in colour. The Kashmir mine, situated in the Zanskar range of the northwestern Himalayas, had the credit of producing gems more nearly approaching "perfection colour"

than other mines. The occurrence of sapphires in the ruby mines of Burma is comparatively rare. Ceylon sapphires are distinguished by a most disturbing patchiness of colour. A great quantity of good sapphires come from Siam, and the mines in Anakie, Queensland, produce a grade of very dark, greenish sapphire which is not sufficiently attractive in colour to achieve popularity as a gem.

The sapphire owes much of its popularity as a gem to its ability to withstand wear. In hardness it ranks next to the diamond. One most remarkable attribute, and a feature adding to a great artistic and commerical value to the gems, is their radiance when viewed by artificial light. Oriental sapphires, excepting only the very finest and most expensive, have the one great failing of absorbing artificial light and of appearing black and lustreless under these circumstances. The "New Mine" sapphires reflect artificial light as well as daylight, and, as a consequence, when worn at night with the lights coming from many directions gain in life and beauty. In colour Montana sapphires run the gamut from a deep magenta, through the valuable colours of corn-flower blue and royal blue, to a very brilliant and pleasant pale blue shade, like a glint of steel. Last, but far from least, "New Mine" sapphires are gems of a rare distinction and quality inasmuch as they have an evenness of colour, an almost complete absence of "silk" and milkiness, are favoured with a freedom from blemishes and impurities, and match up in a very practical and useful manner.

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SPRING HAS CAME

At a Softball meeting in the Plans Department at 5:00 P. M. February 27th, which approximately 20 persons interested in Softball attended, it was decided to form a Highway League composed of three teams. Out of a total of 64 who had previously signed the Softball circular, 56 favored a Highway League, of which 43 wished to play, and 5 favored a Highway team in the down-town league and of these 3 wished to play on such a team.

It was decided at the meeting that a three-man commission should conduct the affairs of the league and the three commissioners selected by ballot were Hack Nelson, Art Winston and Guy Richardson. This commission will have absolute authority relative to conduct on the field, eligibility of players, settlement of disputes and the formulation of ground rules and regulations. They will appoint such special committees as they may deem necessary to locate and prepare a playing field, arrange for a party to raise funds, etc. They will choose three teams (possibly four if enough additional persons later become interested in playing) in the best manner in which they see fit, to the end that the teams will be as evenly matched in strength as possible. The players will be selected from the list of interested players who signed up on the recently circulated Softball circular. It has been offered as a suggestion, but this is a suggestion only, that in selecting this team the Commission consult with two, three or possibly four employees of the Department who are well acquainted with the various players and their capabilities.

In addition, the Commission will handle all funds, make all purchases, appoint scorekeepers and umpires and handle all other matters peculiar to conducting a Softball League.

(Continued on Pg. 46)

We have no record of authorship or original publication of the following poem, which was first printed some four or five years ago. Sectionman Al Spady passes it on to the Center Line.

THE MAINTENANCE MAN

Since Adam blamed Eve for the apple in words to lurid to quote,
There's always been some poor mortal who's fated to be the goat,
And the guy in the hiway system like the dog who is tied to a can,
Is that poor and unsung hero entitled "The Maintenance Man."

For he blades his road in the morning
And leaves it a beautiful sight,
But a tractor goes through with a harrow or two--
You should see that road by nite.

He cleans out his gutters and shoulders,
Then tears at his graying locks,
For the sheep come through and a thousand or two
Can scatter a million rocks!

He sweats all week with his hot pot,
Patching each hole, and then
The trucks come through with a trailer or two,
And he patches all over again!

He sets the posts for his guard rail
Two feet eight inches deep,
But a driver comes through with a drink or two,
And the guard rail's a kindling heap!

He places a red reflector
At a curve on the broad main line,
And a hunter comes through, takes a pot shot or two,
And that is the end of the sign!

So he patches his pavement and toils with his blade,
Cleans out his ditches and builds up his grade.
Replaces his guard rails, trims up his trees,
Crawls through his culverts to clear out the leaves,
Lays dust oil in the summer, sprays weed oil in the spring,
Drives over each mile never missing a thing,
In short he does all that he possibly can,
This poor patient guy called the "Maintenance Man."

But whenever it rains and the pavement gets slick,
Or the paint stripe fades when the fog is thick,
Or a tourist gets dust on his big sedan--
Who gets the blame? Why, "The Maintenance Man."

For since Adam blamed Eve for the apple, and Cain sowed his first wild Oa
There's always been some poor mortal who's fated to be the goat,
And the guy in the hiway system who everyone loves to damn

Is that poor, long-suffering creature entitled, "The Maintenance Man;"
And I think when he meets Saint Peter and looks at the heavenly road,
Where the tractors all have street plates and the trucks never over-load,
With never a broken guard rail, no thistle or puncture vine,
No dust to lay, no weeds to spray and never a shattered sign,
He'll turn to the worthy Peter with, "Pete,this is surely swell,
But, I've heard of another district, we used to call it 'Hell',
And the roads are not so much there for they're 'paved with good intentic
And I think that would suit me better, you see, I forgot to mention--"
"Just stop right there," Saint Pete will say, "For now that I look at yo
pan
I can see why you'd rather go below--you're an old time Maintenance Man!'

.....

THE PRIMROSE PATH

A Persian kitty, perfumed and fair,
Strolled out through the kitchen door for air.
When a Tom cat, lean and lank and long
And dirty and yellow, came along.

He sniffed at the beautiful Persian cat
As she strutted about with much eclat,
And thinking a bit of time to pass,
He whispered, "Kiddo, you're sure some class."

"That's fitting and proper," was her reply,
As she arched the whiskers over her eye:
"I'm petted, I sleep on pillows of silk,
And daily I bathe in Certified Milk.

"Yet I'm not content with what I've got;
I try to be happy but happy I'm not.
I should be joyful, I should indeed,
For I am highly pedigreed."

"You're lithe and pretty; now smile
And trust your new found friend for a while.
You need to escape your backyard fence--
What you need, my dear, is experience."

New joys of living he then unfurled
As he told her tales of the outer world,
Suggesting at last, with a luring laugh,
A trip for the two down the Primrose Path.

The morning after the night before
The cat came home at the hour of four;
The look in her innocent eyes had "went,"
But the smile on her face was the smile of content.

And in later days, when the children came
To the perfumed Kitty of Persian fame,
They were not Persian, they were Black and Tan,
And she told them their Pa was a traveling man.

.....

Havre, Feb. 2, 1940

DearEditor:

The Center Line probably won't print our reply to Division Eight's criticism of Division Seven's Center Line cover, but anyway here it is.

Might we suggest that the brand on the bull be changed from D 8 to D 6 as he appears to have two cylinders missing. It does seem too bad that he is condemned to go through life lacking all that makes life worth living -- to a bull.

.....

Helena, Feb. 5, 1940

Dear Alec:

Division Seven's squawk received, We think it has some merit. We'll print it, since you feel aggrieved, and let our readers share it.

Ye Ed.

.....

Quote --

Our Center Line design, "Equipment Rental"
Provokes Division Eight's derisive laughter.
"Equipment Time" to us was incidental,
To fill the page was all that we were after.

We still believe our 901 was clever,
Tho critics keen our humble efforts flout,
A misplaced line or two was never
As bad as something left entirely out.

Now D 8's bull is quite a noble creature,
As pictured in the Center Line's bright pages.
And yet he lacks that one outstanding feature
That dignified the bull throughout the ages.

.....

Miles City, Feb. 10, 1940

Dear Editor:

I'm not so wise
But why the idle prattle?
Whatever ails those High-line guys?
Don't they know aught of cattle?

Appendices and foot-notes dull
Too many tomes encumber.
For fear you'd think it all was bull
We cut them off our number.

We claim the longhorn likeness good --
We leave it up to you, --
The artist did the best he could --
That's all a steer can do!!

.....

In an Injudicious Court of the State of Montana in and for the County of Petroleum
(nee Fergus).

The Montana State Planning Survey Plaintiff vs John Dough, an engineer of the Chicago, Milwaukee St. Paul & Pacific Railroad Company, the successors in interest of R. S. Zahniser, deceased, S. I. Ramey, Ray Percy, the Public Roads Administration and the Bureau of Parallel Ruts, predecessor in interest of the said Public Roads Administration, the unknown individuals corporations and associations their heirs assigns and devisees who have or may have had any interest in the corporate limits of the Town of Winnett in the County of Petroleum Defendants	Case No. 4-11-44 Judgment and Decree

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The matter of determinging the intersection of the center line of FAP 256-A and the north line of the northwest quarter of Sec. 6 Township 15 north Range 23 east in Petroleum County, said north line of the said Sec. 6 being a part of the north corporate limits of the Town of Winnett in the said Petroleum County having come up in the above entitled court on the fifth day of December, 1939, Judge F. E. Stanley presiding without jury or much of anything else, evidence in the case being submitted by Charles King, attorney for the Plaintiff, said evidence having been examined by the court it appears that at some time prior to the year 1914 the defendant, John Dough, an engineer employed by the Chicago, Milwaukee, St. Paul & Pacific Railroad on the construction of said railway, claimed to have found the northwest corner and the northwest quarter corner of said Sec. 6 and having measured the angles and distances from the center line of said railway to the said corner, made a map upon which he recorded the said measurements that in the year 1928 R. S. Zahniser, deceased, surveyed located and staked the center line of FAP 256-A, making a map thereof on which he showed that Station 1209+92.9 of the said survey was 6.4 feet north of the northwest corner of the said Sec. 6 that in the year 1930 defendant S. I. Ramey did survey, locate and stake the center line of FAP 256-D, making a map of said survey and showing thereon that the northwest corner of said Sec. 6 was 67.3 feet north of station 1231+20.5 of said survey; that on a cold day in January, 1939, Defendant Ray Percy sent a party, said party being unknown to the court to the said Town of Winnett or to the vicinity of the said Town of Winnett, or thereabouts, for the alleged purpose of determining the present location of the said northwest corner and the said north quarter corner of the said Sec. 6 with reference to the said FAP 256-A and the said FAP 256-D and finding nothing save only an ancient picket pin and nothing else, said picket pin having been used in prehistoric time as an anchor for the town cow, said cow having perished from lack of nourishment and /or water, becoming

deceased, dead and considerably defunct, that the said party apparently did with great care and accuracy measure and/or triangulated from Sta. 1220+9818 of the said FAP 256-D to the said picket pin, claiming it to be 144 feet north of Sta. 1220+96.8 aforesaid, that the party having become partly congealed or otherwise did then and there call it a shift and did then return in haste and in an old Chevy to the brick heated steam highway office as made and provided in the City of Lewistown, where said party in great comfort and luxury apparently made sundry and diverse mathematical calculations, adding, subtracting, multiplying, dividing and extracting the square root of numerous telephone numbers, arriving at a multiplicity of weird results and selecting one of said results by the "my mother told me to take this" method, reported to the defendant, Percy, that the northwest corner of the said Sec. 6 was 39 feet south of Station 1209+56 of the said FAP 256-A, whereupon the defendant Percy did in good faith submit the said report to the Plaintiff who thereupon examined and compared the measurements of the defendants and finding that the said measurements of one defendant agreed with those of no other defendant nor with any of them nor with himself, whereupon the said Plaintiff by its attorney Charles King as aforesaid petitioned the above entitled court for relief and an adjudication of the conflicting claims set up by the defendants, praying particularly for a determination of the point where the said FAP 256-A crosses the north line of the said northwest quarter of said Sec. 6.

The court now being fully advised as to the absence of facts in the case and not knowing what it is all about, no precedents being cited to foolishly hamper its decision, it is hereby decreed and ordered that for all practical summer purposes the intersection of FAP 256-A and the north line of the northwest quarter of the said Sec. 6 was,is, and always will be at Sta. 1210+36.1 of FAP 256-A.

Done this first day of February, 1940.

F.E. Stanley
JUDGE

(SEAL)

Don L. Gough
CLERK

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SPRING HAS CAME
(Continued from Pg. 41)

Any suggestions, recommendations or business matters that any one may have pertaining to the Highway Softball League should be taken up directly with the Highway Softball Commission or a member thereof for consideration at a regular meeting.

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MATERIALS LABORATORY PROGRESS REPORT
ON
AN INVESTIGATION OF THE ADHESIVITY OF
BITUMINOUS MATERIALS TO LOCALLY AVAILABLE AGGREGATES
IN THE PRESENCE OF MOISTURE

PART FOUR

Adhesivity of oil for aggregates depend upon the nature of the aggregate surface but good adhesive properties will not insure good stability of the oil mat. Grading and the viscosity of the oil used must be taken into consideration when the stability of the mat is in question.

The foregoing discussion has treated with the topic of adhesion of a bituminous material to mineral aggregate. When discussing stability however, the term cohesion, or cohesivity, enters. The two terms are distinct and separate, and although discussion will seemingly contradict itself, no trouble will be experienced if the meanings of the two terms are kept clear. Adhesivity is the "sticking together" of the oil and aggregate surface, while cohesivity is the ability of the individual oiled particles to stick to each other, thus creating mechanical stability.

While it is true that the adhesivity is not bettered by natural agencies, cohesion in a connected mat can be materially bettered by selection of a higher viscosity oil, by selective grading, or by a selection of a combination of both. Also, a compacted mat, even if made of hydrophilic material, which has had sufficient curing time prior to adverse moisture conditions to increase the viscosity of the binding medium through polymerization, condensation or volatile loss, may give good service through its increased mechanical cohesion.

A study of the comparative effect of different types of slow curing road oil on the stability of a top course aggregate with very good adhesive qualities, but with very little stability, was made.

Modified Hubbard-Field stability tests were run on mixes using 3 different types of SC-3 oil and one SC-4 oil. The standard laboratory grading was used except that the plus 4 mesh material was rejected.

Three 600 gr. samples were heated and oiled with 4.3% of the different oils at a maximum temperature while mixing of 200° F. It was observed during this process that there was little difference in the appearance and feel of the mixes. At a temperature of 150° F. all oils coated the aggregate well and gave it a decided brown color which changed to black as the temperature was raised to 200° F. After cooling, the mixes, though well coated, were dry. After three hours of cooling, 100 gr. briquettes were made under a pressure of 4720#, approximately 1500# per square inch. The briquettes were immediately forced through the Hubbard-Field orifice on their stability machine at a constant rate of pressure, and the pounds pressure necessary to produce shear was observed.

The remainder of the oil mixes were again heated to 200° F. and the oil content was raised to 6.0%. These mixes did not have the appearnace of being overoiled and still had little tendency to compact. After cooling

for 24 hours, 100 gr. briquettes were made and the above procedure repeated.

The results were as follows:

SC-3 oil	% oil	Pounds Stability
1. (Cracked)	4.3	1500
	6.0	2000
2. (Lightly cracked)	4.3	1400
	6.0	1450
3.	4.3	1350
	6.0	1450
SC-4 oil	4.0	2100

In preceding stability tests checking limits were observed to vary over a range of 200#. In view of this fact it seems safe to conclude, with respect to this particular aggregate, that the type of SC-3 oil has little to do with immediate stability. In the above tabulation highly cracked oil shows more stability, regardless of the fact it has less asphaltic residue content. The low viscosity, low asphaltic residue, straight run oil shows the least stability. A higher viscosity oil was recommended for this particular aggregate on the basis of the better stability figure that SC-4 gave on immediate shear, even though it had a smaller percent of oil in the mix. In other words, good properties with respect to adverse moisture conditions, does not solve the problem of mechanical stability.

In cooperation with the Oregon State Highway Testing Laboratory, work on the use of different types of oils was conducted on two distinct types of aggregates. As can be seen from the following data table, the higher viscosity oils in the straight run group gave distinctly better results on the 24 hour strip test, but in 7 days deteriorated to approximately the same appearance as the lower viscosity oil mixes. This explains the better behavior of RC-4 over RC-1, since the base asphalt of the RC-4 has a much higher viscosity, and also loses its smaller percent of light cutback faster than the RC-1. This shows that the immediate cohesion effect, which repels moisture for a time, really seems to give better adhesivity to the aggregate-binder system.

Cracked materials, which give much better immediate strip results, acquire the same resistance to strip as the higher viscosity oils, through its inherent heterogeneity. The lighter fractions of a cracked oil are absorbed at a faster rate, leaving the higher viscosity material in the voids to give a higher stability figure and a better immediate strip. It is also possible that certain fractions in a cracked oil could have free valences to take advantage of ionic adsorption of some aggregates, thus creating a chemical bond on the interface between the aggregate and oil which would resist any stripping, regardless of the time it be subjected to moisture.

Due to the extreme volatility of cutback material, which militates against retaining comparable amounts of the lighter fractions in the finished mixes, cutback bituminous products should not be used in the routine strip test. In much the same light, cracked material, due to its heterogeneity, should not be used. Our laboratory has chosen a straight run, slow curing oil for all routine test work in attempting to eliminate these variable factors.

(To be continued)

PROPERTIES OF ASPHALTIC MATERIALS USED IN COOPERATIVE TESTS

GRADE OIL	TYPE	VIS.-SEC.	DISTILLATION--F. 374	437	600	680	PENETRATION ASPHALTIC RESIDUE	FLASH	(*) Aggregate No.1 1 day	7 day	(*) Aggregate No. 2 1 day	7 day
SC-4	Straight run	524 @ 140 F.					76.2% @ 80	305	7	8	7	8
SC-4	Slightly Cracked	400 @ 140F.	0.5	1.0	1.5	5.5	79.2% @ 78	300	8	8	5	7
SC-4	Highly Cracked	475 @ 140F.	0	0	0.5	3.0	79.0% @ 80	350	4	5/	2/	4
# SC-3	Straight run	287 @ 140F.	0	0	3.0	10.0	76.0% @ 80	370	8	8	8	8
SC-3	Slightly Cracked	222 @ 140F.	0	0.5	5.0	10.0	74.0% @ 83	285	8	8	7	7
SC-3	Highly Cracked	204 @ 140F.	0	0	0	2.0	75.0% @ 78	345	3	5/	3	4
RC-1	Neg. Oliensis	186 @ 77F.	15	26	35	38	Dist.Res. -- 70	108	6/	7	3	6
RC-1	Neg.Oliensis	193 @ 77F.	10	27	36	48	Dist.Res. -- 60	102	4	7	2	5
RC-1	Neg.Oliensis	161 @ 77F.	15	27	35	37	Dist.Res. -- 65	105	6-	8	6/	7
RC-4	Neg.Oliensis	995 @ 140F.	0	3.5	12.5	14.5	Dist.Res. -- 91	120	2/	4	2	6
RC-4	Neg.Oliensis	1061 @ 140F.	0	4.0	12	13	Dist.Res. -- 85	100/	2-	4	2-	3/
# RC-4	Neg.Oliensis								2	4	2	6
MC-2	Straight Run	214 @ 140F.	0	1.5	15.7	26.5	Dist.Res. -- 150	160	6/	7	6/	6/
MC-2	Slightly Cracked	229 @ 140F.	0	0.25	16.5	20.5	Dist.Res.--153	186	6/	7	6/	6/
MC-2	Highly Cracked	223 @ 140F.	0	0	12.5	17.5	Dist.Res. --150	210	2-	3/	2	3
MC-3	Straight run	340 @ 140F.	0	0.5	12.5	17.5	Dist. Res.-170	170	5/	7	6/	6/
MC-3	Slightly Cracked	480 @ 140F.	0	0	11	16	Dist.Res. - 140	165	8	8	2	4
MC-3	Highly Cracked	452 @ 140F.	0	0	8.5	13	Dist.Res. - 172	215	2	3/	3	3

Note: Distillations on SC-3 and SC-4 are only typical.
*Numbers indicate relative amount of stripping.
Exchange material results.

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